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Gleanings in Bee Culture



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VOL. XL. MAY 1, 1912, NO. 9.

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By special arrangement with the publishers, for a limited time we can offer the FARM JOURNAL FIVE years and GLEANINGS IN BEE CULTURE one year in advance, BOTH FOR \$1.00. Or FARM JOURNAL FOUR years and any one of the booklets, "Money-making Secrets," with GLEANINGS for **ALL THREE for \$1.00** one year

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Gleanings in Bee Culture

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Editorial

THE HISTORY OF BEE DISEASES.

THE Bureau of Entomology, Washington, has issued another bulletin, No. 98, by Dr. E. F. Phillips and Dr. G. F. White, entitled "Historical Notes on the Causes of Bee Diseases." This contains a large amount of valuable data that will be interesting and helpful in further research. We presume it can be obtained for the asking. Apply to the Superintendent of Documents, Washington, D. C.

DR. MILLER RECOVERING FROM THE GRIP.

OUR old friend and Nestor of bee-keeping, editor of *Stray Straws*, Dr. C. C. Miller, has been having a very severe attack of the grip. Two other members of his family have had a similar attack, but we understand they are now all convalescent. Had it not been for the fact that we have had *Straws* ahead, Dr. Miller's familiar notes and comments would have been conspicuous by their absence in our last issue.

GROUND COBS FOR PACKING MATERIAL.

THERE has been some inquiry regarding the suitability of ground corn cobs for cushions and for double-walled hives. We have made some inquiry and find that this material can be purchased very cheaply from feed stores, farmers' exchanges, mills, etc., as it is used for mixing with feed for cattle, etc. Those who can do so would do well to try this material, for it is a well-known fact that corn cobs will absorb a great quantity of water. Ground cork is used to quite an extent, but of the two we should prefer the ground cobs.

BEE INSPECTION IN CONNECTICUT.

FROM a report of the Connecticut Agricultural Experiment Station, New Haven, we learn that European foul brood has been the principal disease found in the State. In 1910 over three-fourths of the apiaries and nearly one-half of the colonies examined were found diseased. In 1911 only about one-half of the apiaries were diseased, and less than one-third of the colonies were infected. Of the colonies treated in 1910 and

examined again in 1911, less than one per cent were found diseased.

The usual plan of shaking colonies on clean frames and foundation was carried out, and the old hives disinfected. A few of the worst colonies were destroyed; but this was shown to be unnecessary if the treatment is given in time.

The total number of colonies inspected in 1911 was 1571, and the number reported as having European foul brood, 481. The average cost of inspection per colony was 21 cts., or \$323 in all. At the end of the report of inspection of apiaries, an appropriation of \$500 is recommended.

THE UNITED STATES STATISTICS REGARDING BEES AND HONEY; ARE THEY ACCURATE?

IN an editorial referring to the United States statistics concerning the honey business, page 67, Feb. 1st, we gave it as our opinion that they were not accurate in some particulars, adding that the statistics from manufacturers, showing the amount of supplies sold, would indicate that the bee business was on the increase rather than on the decline. The following letter is only one of many, and it explains how and why some of the census figures concerning bees and honey must not be taken too seriously:

Please tell me what the worth of the United States census is to beekeepers.

I was at home when the taker came, and I asked him if he took the bees into account. He said he did not unless their product amounted to \$400 or more. I had about 40 colonies in my yard, and yet they were not taken into consideration.

There are more bees in Massachusetts in smaller apiaries than mine than there are in larger ones, and yet they are not taken by the census enumerator.

JOHN P. COBURN.

Woburn, Mass., Mar. 22.

Before another decade rolls round, the National Beekeepers' Association should have this matter brought before the census people, calling attention to the 1910 discrepancies, and asking for a more thorough canvas of the number of colonies and bees an individual owns. Another thing, bees owned in cities and towns should be included. If the census was taken in the manner spoken of in the letter above, it is

no wonder that the United States statistics do not agree with the data in the possession of the manufacturers of supplies and publishers of bee journals. We have no doubt that the Bureau of Entomology, especially if the present men are still in office, will see to it that the 1920 census is more accurate.

THE VALUE OF HONEY AS A MEDICINE BECOMING BETTER KNOWN.

THAT honey is the base or principal ingredient in many medicines, especially cough syrups and gargles, is a fact already well known. Its value is being appreciated more and more as the following letter will show:

There are two books of authority governing the preparation of medicinal drugs found for sale in drugstores. One is the "Pharmacopeia of the United States," and the other the "National Formula." The books are prepared by a commission of the American Pharmaceutical Society with the help of government representation. They are revised every ten years, some drugs being added, while others, for one reason or another, are dropped. In the third installment of new formula suggested for the forthcoming new edition of the "National Formula," three out of twelve proposed additions contain honey. These three are as follows: Compound Gargle of Gualac, 20 per cent honey; Honey of Rose with Borax, 85 per cent honey; Honey and Borax, 85 per cent honey. Of course honey is mentioned in these books already, but the substantial increase is what interests the beekeepers.

As an illustration of the importance of these books, I know a man who wrote and labored for nearly a lifetime to get one of his botanical favorites admitted in which he had explicit faith, but it was never accepted on account of its doubtful medicinal property.

Galena, Kan.

J. P. BRUMFIELD.

THE NEW GOVERNMENT BULLETIN ON SWEET CLOVER.

WE have before us, from the United States Department of Agriculture, Farmers' Bulletin 485, entitled "Sweet Clover," by J. M. Westgate, Agronomist in Charge of Clover Investigations, Bureau of Plant Industry, and H. N. Vinall, Assistant Agrostologist, Bureau of Plant Industry. We do not hesitate to say that this is one of the most valuable bulletins ever issued by the government. Sweet clover, formerly regarded as a weed except by beekeepers, is now being recognized by our government and State experiment stations everywhere as one of the most valuable forage plants for stock that is grown. While it may lack some of the feeding value of alfalfa and red clover it will grow on soils where nothing else will thrive; and, what is more, it prepares the way for other valuable crops, especially alfalfa, by inoculating the soil. Evidently the authors spent not a little time in gathering the material. We would advise every one of our subscribers to send for the bulletin, especially if they live in a locality where sweet clover is regarded as a noxious weed.

It describes the different species of sweet clover as well as the history and distribution of the plant; its adaptability to various soils and climates; how to grow it; the value of the hay; how to cut it; its feeding value

for stock as well as an improver of the soil. Send to the Secretary of Agriculture, Washington, D. C.

This bulletin will do more to correct the old notion that sweet clover is a noxious weed than any thing that has appeared before—especially so as it bears the stamp and seal of our dear old Uncle Sam.

Beekeepers will now have some chance of getting an amendment to the State laws that include sweet clover as one of the noxious weeds.

FRAUDULENT PACKING OF BULK COMB HONEY.

OUR attention is called to the fact that in putting up bulk comb honey in Texas, what is called "chunk honey" is being put up in a manner that is hardly in keeping with the golden rule. The following paragraph, taken from Bulletin 142, by Wilmon Newell, College Station, Texas, to which we referred a short time ago, will explain:

A deceptive method of packing bulk comb honey has recently come to our attention, and it can not be too strongly condemned, both by customers and honest bee-keepers. As explained on a preceding page, bulk comb honey, when properly packed, consists of cans filled *full* of comb honey, the latter cut into just as large pieces as will go into the can. What few openings *then* remain are filled with extracted honey.

Some bee-keepers have, however, adopted the plan of filling the honey-cans *only about one-third full* of comb and then filling up the can with extracted honey. Of course the pieces of comb float on top of the extracted honey; and when the customer takes off the cover the can *appears* to be filled with comb honey. The deception is not discovered until the customer has purchased the can and used out about a fourth of its contents. Such deception is little short of actual fraud, for bulk comb honey usually sells at from two to five cents per pound higher than extracted; and when the customer pays the higher price for bulk comb he is certainly entitled to it, not to a mixture containing 75 per cent of a lower-priced honey.

It did not occur to us that there could be the deception practiced; but it is very apparent that, if the consumers of bulk comb honey like to eat comb honey, they are entitled to have the pail full of comb, and only the spaces filled up with extracted.

WHY WE SHOULD PRODUCE MORE COMB HONEY FOR 1912.

THE firm of Hildreth & Segelken, of New York, is one of the largest buyers of comb and extracted honey in the United States if not in the world. They therefore have unusual facilities for knowing the condition of the market as it relates to the relative production of comb and extracted honey. The very fact that they confirm our statements on the subject as given on page 221, secured through entirely separate sources, and independently of them, gives additional proof that more comb honey ought to be produced this coming season. A word to the wise is sufficient. Well, here is what Hildreth & Segelken have to say:

Mr. Root:—We are just in receipt of your April 15th issue, and note your interesting article on page 221 under heading, "Why Beekeepers Should Produce More Comb Honey This Year." Your advice is certainly timely, and we indorse every word you say. The markets are practically bare of

choice white comb honey, while there is an abundant supply of extracted still on hand, with prices declining right along the line. With another good crop this coming season, extracted honey, we dare say, will see lower prices, while comb honey (that is, the better grades) will certainly command good prices, and find ready sale—especially so if the producers will take care in grading and packing.

HILDRETH & SEGELKEN.

New York, April 18.

Read it over once, and then read it again. After that, paste it in your honey-house or in your hat.

Now, then, if you have decided that you are going to produce *comb* honey the coming season, do not make the awful mistake of trying to get along without separators or putting the honey in cheap or poorly cobbled-up home-made shipping-cases that are either too large or too small. If we are ever to restore the comb-honey business to where it was, the sections must be carefully and honestly graded, scraped clean of propolis, and arrive at destination in good order. You can make a quick sale and at the top notch if you will follow these directions—particularly in the matter of grading and packing.

LIVING ON HONEY AND WATER.

ONE of our subscribers, E. L. Sechrist, Clarksburg, California, sends us the following clipping from one of the California papers:

PLACER COUNTY MAN ENGAGES IN FAST ON ACCOUNT OF ILLNESS.

For thirty-eight days A. Thommen, a well-known rancher living near this city, has been fasting, and from present indications he will continue fasting for many days to come. Mr. Thommen does not seem any the worse for his experience—in fact, there are some who think he is improving in health. He states that he is increasing in weight. A few days ago he was in the city, and while at Clegg's store lifted a sack, weighing 140 pounds, and carried it to his wagon.

Mr. Thommen, during his fast, has partaken only of water and two ounces of honey a day. He undertook his fasting because of certain stomach troubles.

Auburn, Cal., Dec. 14.

This is the first time that we have ever heard of one living on honey alone, and we shall be very much interested in the outcome of the experiment. We doubt very seriously whether there is any other food than honey, which, taken in so small an amount as two ounces in twenty-four hours, would give so much strength.

A FREE BULLETIN ON SWEET CLOVER.

Do not forget to send for Bulletin 485, on sweet clover mentioned on another page. It can be obtained free by addressing the Secretary of Agriculture, Washington, D. C. We hope every one of our subscribers will ask for it at once. A. I. Root has just read it, and he is so enthusiastic over it that he will have considerable to say about it in forthcoming issues of *GLEANINGS*. In the mean time get a copy for yourself and for your neighbor.

We understand that the Secretary will send copies to as many addresses as may be

sent in. Send the names of your road supervisors, and your representative and senator in the State legislature, and write them, saying that you are having a copy of a sweet-clover bulletin sent to them. Request them to read it through so that they can see that sweet clover is *not* a noxious weed; that its propagation should be *encouraged* instead of being discouraged the way it now is by law, that requires the road supervisors to treat it as a weed and cut it down.

WINTER AND SPRING LOSSES TO DATE.

IN our last issue we estimated that, where losses had occurred, the mortality would be about 50 per cent. At this writing, April 25, we fear it will go even higher. Along about the last of March, warm and even hot weather came on, and the bees began breeding strong. This was followed by cold and chilly weather, bringing on severe spring dwindling. The bees, in their effort to save their brood, chilled and died, so that we are hearing of patches of brood chilled to death, and the bees gone. In some localities where the losses reached 50 per cent, the mortality will be nearer 75.

There is going to be a most extraordinary demand for bees. In the extreme North the losses will not be heavy. South of the Ohio River bees have wintered fairly well. We shall be glad to publish free a list of those who have bees for sale in order to help out those who have suffered severe winter losses. It may be that there are some beekeepers who know where they can get colonies in box hives. If you are one of them, we advise you to secure an option on them, and then write us what you will sell them for. Ordinarily, bees in box hives are not worth more than \$2.00 or \$2.50. When freight or express are added, as well as the labor of transferring, \$2.00 or \$2.50 is about all the purchaser can stand.

WINTER LOSSES NOT UNIVERSAL.

Do not understand from what we have said that losses are going to be universal, for they are not. Throughout Canada, Northern New York, Northern Michigan, Minnesota, Northern Wisconsin, and the New England States, the losses will not be heavy. The region between the Great Lakes and the Ohio River is where the principal losses have occurred. There are many beekeepers in the Southern States who doubtless will be able to do their brethren of the North the good turn of putting them on track of bees in box hives. We happen to know of two beekeepers now—Mr. F. B. Cavanagh, of Hebron, Ind., and J. L. Byer, of Mt. Joy, Ont., who are in the market for cheap bees. While Mr. Byer has not lost in wintering, he wishes to "keep more bees."

In the same way we shall be glad to publish a list of those who desire to get bees. *GLEANINGS* will do all it can to help its subscribers. Indications are still favorable for a good honey year, providing a drouth does not come on in May.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

TETRACHLORIDE of carbon—has any one tried it in this country? and is it better than bisulphide of carbon? [We should be glad to get reports.—ED.]

WHICH IS the right side of a hive? Say a hive faces south; is the east or the west the right side? I think it's the west side, but I don't know. [Ask something easier.—ED.]

BALLING. The A B C and X Y Z instructs, "Lift the ball out of the hive and blow smoke on it until the bees come off one by one." To this should be added: "Hold the smoker far enough from the ball so the smoke will be cool. Hot smoke will make the bees kill the queen." But I like better to throw the ball in water.

ACCORDING to a table given in *Schweiz. Bztg.*, p. 467, here are the numbers of colonies of bees per hundred inhabitants in the following countries: Norway, 1.0; Belgium, 1.6; Austria, 3.8; Hungary, 4.2; Germany, 4.6; Denmark, 4.8; United States, 5.4; Switzerland, 6.5. [According to the figures of the last census, the United States would probably drop back a little.—ED.]

IRISH BEE JOURNAL, p. 24, reports a bee-keeper in the Isle of Man who took from one hive in one season 334 lbs., which, at 6d. per lb., would bring nearly \$42.00, and says, "Think of that, O GLEANINGS! as an average for one colony!" That was, almost surely, extracted honey. "In this locality" a single colony in one season yielded 300 lbs. of *comb* honey, which, at 15 cts. a lb., makes \$45.00. Think of that, O I. B. J.! as an average for one colony!

DR. C. D. CHENEY has sent me a modification of the Root hive-tool that has a good look. The right-hand corner of the chisel end is rounding, and the other corner is left square, as usual. That gives all the advantage of the full rounded end to be forced under a super, and also of the sharp angle. At a distance of $1\frac{1}{4}$ inches from the chisel end there is a slight curve, raising the hand a little above the point of entrance. This gives one more power, I should think, than to push in a perfectly horizontal direction.

G. M. DOOLITTLE, you seem to favor cutting out the best of the old combs to be used over again in brood-combs, p. 192. What an old fogey you are! Don't you know that bees reared in that old comb will be dwarfed in size, and that part of the combs in a hive should be renewed each year to avoid that dwarfing? The trouble is that the bees are just as old fogey as you are. Give them an equal choice between new and old comb, and they'll take the old every time. Come to think of it, in 50 years I've never renewed a comb on account of age, and I have some fair-sized bees yet.

PARCELS POST is so nearly in sight that it is about time to be talking about the best packages for carrying comb, bulk-comb, and extracted honey by mail. They should be of different sizes up to 11 pounds each, and of such material and construction as not to leak and get honey ruled out of the mails, and at the same time as inexpensive as possible. [Do not be too sure. It is one of the tricks of the politicians to make us think that they are going to pass the legislation we want; and then when we are off our guard they stick in an amendment, or several of them, that utterly nullify the original measure. Better keep on sending postal cards to your senators and representatives, urging them to support parcels post.—ED.]

I HAVE HELD that the most vigorous bees best resist European foul brood, whether Italians or blacks. Now comes *Canadian Bee Journal*, 55, claiming that immunity is a thing separate and apart from vigor. Asiatics have developed ability to resist disease to which stronger whites would succumb—and more of that sort. Sad as it may be to crawfish at the behest of that Kanuck, I can't muster any satisfactory reply. But I wonder if I can't, at least for a while, hold on to this position: In case of a light attack of European foul brood, the bees sometimes, if not often, clean out the disease of their own accord, and in such case it's the most vigorous colonies that do the best work. Now let's see what that Kanuck will do to me.

THIS MORNING, March 28, at 8 A. M. the sun shone brightly, temperature outdoors 40 degrees; in cellar, a shade above 50. The bees have been in cellar 136 days (4½ months). Doors had been open all night; door opening from furnace-room into bee-room. It was light enough at the pile of hives nearest the door, with entrances directly facing the door, so that at those entrances I could read with little difficulty print like this page (I used a page of *Straws* to try it). Although it had been open like this all morning, the bees were very quiet, not a bee flying out. The point I want to emphasize is that, with doors wide open, the air was about the same as outdoors, only warmer, and with hive entrances 2x12 the bees didn't need to stir to ventilate hives. Whatever else you do or don't do in cellar-keeping bees, do all you can to give them *pure air in abundance*. [You are just right, doctor. If a cellar is reasonably dry, with plenty of good pure air, bees will stand extremes of temperature very much better than when air is poor and damp. You can not emphasize too strongly the importance of pure air.—ED.]

Beekeeping Among the Rockies

WESLEY FOSTER, Boulder, Colo.

THAT SPRING MEETING.

This will be held in Montrose, May 10 and 11. This promises to be a more largely attended meeting than the regular annual meeting in the winter. Montrose is going to entertain the Association in good shape, and every beekeeper who can possibly attend should do so. Homeseekers' rates will be on sale from Denver, Colorado Springs, and Pueblo so that these rates may be available to a good many bee-men on the eastern slope. The homeseekers' rate is one fare for the round trip, good for thirty days.



Zero weather in March, with a two-foot snowfall, and the bees buried beneath it (for which I am glad) was pretty severe for Colorado; but we shall be the gainers when the honey harvest comes. Water for irrigation is assured already, as the snowfall passed the normal for this time of year, and more has fallen on the ranges than for several years. There will be more arguments for double-walled hives in every beeyard, when this cold wave has passed, in the shape of dead bees and colonies. When folks get into a habit it takes a good deal to make them see their mistake. Perhaps we shall have to have several demonstrations of the value of double-walled hives or winter cases before we change our ways.



LIME FOR THE CLOVERS

At the farmers' congress over a year ago Joe Wing referred to the use of lime for our alfalfa, and said we would soon need to use it, if it was not necessary already. I think he is probably right. Various reasons have been given for the shorter growth and less luxuriant bloom; but the lack of lime in the soil has not been given serious consideration. The winter pasturage by stock, the freezing of the alfalfa that does not stool below the ground, and the constant hauling of the crops to market and putting nothing back on the land in the way of fertilizer have all been advanced. They are all factors, no doubt; but perhaps it would be well to look into the lime problem a little. The more thrifty the growth, the more nectar for the bees. It will not do any harm for beekeepers to help the lime investigations along in every way possible.



FREE SUGAR.

It looks like it; and, regardless of our personal interests, it will be a good thing for the country as a whole. The beet-sugar interests are opposed to it, and the farmers who raise sugar beets will be drawn into the fray. We in America will have to come sooner or later to a realization of the importance of supporting public benefits in the face of private loss. I would vote for free

sugar, even though it might have a tendency to lower the price of honey. The beet-sugar industry is a very important one in Colorado, and I notice that our three Congressmen from Colorado are against free sugar. But there is no reason for alarm to the industry as I see it, and any way there is not a farmer who can not make as much from other crops as he can from beets. In fact, many farmers have given up the raising of beets; and the greatest difficulty of the sugar company is to get contracts for the raising of beets, signed by the farmers.

Colorado has seventeen beet-sugar factories, I think, and there seems to be an effort to make public sentiment against free sugar now by putting men to work at remodeling the factories. One hundred and fifty carpenters alone are reported to be at work on the Longmont sugar factory. Whether this work is being done now to make sentiment against free sugar, it is a fact that all the news of the beet industry is finding its way very quickly into the newspapers. Much is made of the immense acreage signed up in the different districts. I believe the majority of the citizens are in favor of free sugar, and I am satisfied they are throughout the whole country. Let us have it.



A BEEKEEPERS' BUNGALOW.

I have been figuring a little recently on the trend beekeeping is taking, and I am convinced that, for the West, an automobile is the cheapest method for the man with 400 colonies or over. Now, what is the use of building an expensive shop to store all one's supplies in when one building can house the family and supplies and auto too? A full basement under a five or six room bungalow, with the first floor three feet above the ground to give light in the basement, will house the auto and supplies for 500 colonies, and leave room for shopwork and furnace-room and vegetable-cellar. An inclined drive into the basement at the rear of the house would be provided; and with the first floor three feet above the ground the basement floor would not need to be more than four or five feet below the surface of the ground. The furnace would heat the basement to a comfortable heat for working in winter, and the auto could be loaded and unloaded right in this basement shop. This would obviate the building of a shop, barn, or garage for supplies, horses, or auto outside. The beekeeper would always be close to his shopwork, and the water supply and heat for the house would be available for the basement shop. Most of the beekeepers in the West live in town, and run out-apries; and a home built on this plan would meet the requirements of many a beekeeper. Some of these days I will build a bungalow on this plan myself.

NOTES FROM CANADA

J. L. BYER, Mt. Joy, Ont.

See here, Arthur C. Miller, you ought to be ashamed of yourself for trying to poke fun at two innocents as you have done, Mar. 1, page 131. It so happened that the two boys referred to never knew that they were preparing an article at the same time, so you see there was no deep-laid scheme between us, and we were running a big chance of tripping one another. However, when all is said and done, you may rest assured that none of us are going to try to prevent your using a hive that needs a paper-hanger to get it in shape for winter. On the other hand, if spared till another fall this scribbler will pack the bees just a little bit better than ever before, for fear next winter *may* be colder than the last one.



QUEEN REARING WITHOUT GRAFTING.

The plan of getting queen cells by laying a brood comb flat on top of the combs of a colony, as described in March 15th GLEANINGS, also in March *Canadian Bee Journal*, seems to be creating a lot of interest. It certainly looks well; and in June I hope to try it on a small scale. When friend Greiner wrote it up last year it appeared to me to be something really original, although in some ways it had a resemblance to the Alley plan. It seems funny that more notice was not taken of the plan which Mr. Greiner so fully described at the time; and this only shows how prone we are to overlook a good thing until a number call our attention to it. While the plan will especially appeal to the busy home producer, I doubt if it will ever be popular with the commercial queen-rearer, as he would not care to mutilate so many combs as would be necessary when thousands of queens were being raised.



INBREEDING TO A HARMFUL EXTENT NOT POSSIBLE.

Much has been said during the past few years about "in-breeding" of bees. Of late I have been thinking the term a misnomer in so far as it relates to bees. Recently it has been my privilege to attend the short courses at Guelph Agricultural College; and after seeing how closely line bred are all our various kinds of stocks, including poultry, I have come to the conclusion that it is virtually impossible to inbreed bees to a harmful extent. Why? Simply because of parthenogenesis defeating our plans, and because of the fact, too, that, so far, we have no successful plan of controlling the male parentage. Judging from the amount of trouble that breeders of different kinds of stock have in getting true distinct types, even when they can control both sides of the parentage, I confess to being a bit skeptical as to the probability of beekeepers doing much along that line until some method is found of controlling the mating of our queens.



Regarding these short courses, it is indeed a healthy sign to see hundreds availing themselves of the benefits to be derived from these institutions. While I had little time to attend the beekeeping course, yet my few visits convinced me that there were many earnest students in attendance. The program was intensely practical, and the facilities for demonstrating very fair, considering that beekeeping has just recently been recognized. If I am correct, I believe that about 50 attended the course. I shall have more to say about this in a future issue.



WHAT ARE HYBRIDS?

Dr. Miller is quite a stickler as to the use of correct language; and yet, in common with the rest of us, he unblushingly makes use of the word "hybrid" when speaking of cross-bred bees, page 152, March 15th; Now, we all know that the term "hybrid" refers to the offspring of the crossing of two different species; as, for example, the mule in the animal kingdom, or emmer, or speltz, in the varieties of grain. As nearly as I can find out, beekeepers are the chief sinners who use this misnomer when speaking of cross-bred stock. Just why this is the case is hard to explain, unless the excuse of brevity will have to explain the matter. No, I have no fault to find, but it only shows how we can change the real meaning of a word by constantly misusing it; and after all no harm is done so long as no confusion results from the change. Possibly "shook swarming" will soon be recognized as being perfectly in order so far as the doctor is concerned.



DEEPER FRAMES THAN LANGSTROTH PREFERRED.

Regarding the discussion on depth of frames for wintering, provoked by that article of Mr. Simmins in a recent issue of the *C. B. J.*, it appears that both sides of the controversy are going to extremes, as is very apt to be the case in all discussions along this line. With the hive advocated by Mr. Simmins, certainly his claims appear ridiculous when it is considered how little difference in size there is between the hive he is censoring and the one he is upholding. On the other hand, I am firmly convinced that a frame one-third or more deeper than the L. size is away ahead of the latter for wintering outdoors in our climate. I do not say that bees can not be wintered on these shallower frames, for such a claim would be absurd; but it takes far more attention to be sure of results with this frame than it does with the deeper frame. This assertion will, I believe, be accepted by nearly all who have tried the different depths side by side. Personally I much prefer the deeper frame, but at the same time I generally advise beginners to start out with the standard frame.

Conversations with Doolittle

At Borodino, New York

PROFITABLE AND UNPROFITABLE WORK.

"Mr. Doolittle, I have been thinking that it is very easy to spend more time and work with bees than strict economy requires. What do you think about it?"

"Undoubtedly there is quite a little work done in many apiaries that is not strictly necessary, along the line of fussing with bees. At its present high price, labor is the most expensive factor in honey production, and all possible short cuts should be taken advantage of. Sometimes it is well to ask ourselves the question, 'Will this work pay?' or, 'Could not the time be used to better advantage in doing something else?'"

"What are the really necessary things to do at first?"

"The first work in the spring, where bees are wintered in the cellar, is to remove them to their summer stands; and in doing this, if the bottom-boards are turned, or a clean one given to No. 1, and No. 1's old board cleaned for No. 2, then cleaning the one taken from this, and so on, a saving will be made above a general cleaning later on, and the bees are put in better condition at the outset. Then, as soon as a day will permit, go over all colonies, seeing that they have sufficient stores to last till the nectar-producing flowers bloom, and also that each colony has a good queen."

"Is that all you do before the flowers bloom?"

"That is all that is really necessary, except where any are found short of stores, queenless, or with very poor queens. The wants of these must be supplied immediately, or as soon thereafter as is possible. After this, unless you have your hives and surplus arrangements all in readiness before, this work should be done while waiting for the honey-flow."

"But the beekeepers about me wait till their colonies become strong, or till they know just how many supers are necessary, on the ground that it is poor economy to purchase a lot of stuff and run the risk of losing many colonies or having them weakened by spring dwindling."

"That is the poorest kind of economy; for hundreds if not thousands are caught by a good honey-flow without being prepared, and the loss of this good flow, or any part of it, would more than overbalance the interest on such an investment. There is nothing like being in readiness at all times and in all seasons in the bee business. As soon as the first nectar is coming in from the fields all colonies must be looked after again, the wings of all queens clipped, the stores and brood looked after, and a memorandum of each colony made, so that the apiarist can govern his work on each during the summer accordingly. This memorandum of each will tell where the first supers are to go on, where the first work is needed in regard to the prevention of swarming, or where the

first swarms may be expected to issue, if natural swarming is allowed. It will also tell where poor queens are to be replaced with good ones, which colonies are to be replaced with good ones, which colonies are to be bred from, both as to queens and drones, and where drones are to be restricted by doing away with all drone comb as far as possible, etc."

"But do you keep this memorandum for the whole season?"

"No; but we hardly make out a full one thereafter. As hinted at, the supers are put on at just the right time, considering the strength of the colonies and the blossoming of the flowers which give the surplus honey. More supers are added at just the right time; finished supers are removed promptly, the honey graded and packed according to the demands of our market, so as to have it ready for the early price, thus taking advantage of these things in a way to bring us the most for our product. As fall draws on, the bees must be put in good condition for winter, not waiting till the last moment as so many do."

"Your question, then, could be answered very briefly by saying, 'Do things at just the right time and in the right place, leaving no stone unturned whose turning will result in profit.' The old way was, merely to hive swarms, put on and take off supers—nothing more—as the bees work for nothing and board themselves. The other extreme is, to look each colony over every week, equalize stores, raise queens, take each section off as soon as sealed, feed for winter, etc. The practical course does not reach half way between these two extremes. The farmer loses much honey by not doing a few things at the right season. The practical, economical, professional apiarist does just those things, but no more, and at just the time for the best results."

Extracting Uncapped Honey Not Practiced Generally in New Zealand

Having noticed some time ago a letter from Mr. Isaac Hopkins advocating the extracting of honey before it has ripened in the hive, I wish to state that Mr. Hopkins stands alone in that matter so far as the beekeepers of New Zealand are concerned. We had an exhibition here some years ago. Mr. Hopkins, then acting for the government, was running an apiary in connection with the exhibition. At that time he was practicing his plan of premature extracting; but the sample of the honey in Agricultural Hall soured and started to ferment; yet in spite of such adverse experience he still advocates the plan. He quotes Mr. Alexander as supporting him; but it must be remembered that the conditions upon which Mr. Alexander based his theory were altogether different from what we have here, as buckwheat is not grown here to any extent, if at all. I am glad to see that all the criticism of Mr. Hopkins' ideas have been adverse; for although, under some circumstances, it may work without disaster, yet in most cases it can never be a success.

A. IRELAND,
President Canterbury Beekeepers' Association,
Christchurch, N. Z., Jan. 20.

General Correspondence

MAKING INCREASE

The Importance of Becoming Acquainted with the Advice in the Best Books on the Subject

BY DR. C. C. MILLER

[The following is a reply to a question asked by J. G. Nance, Kevil, Ky., on the subject of making increase. Mr. Nance sent the same inquiry to Mr. Doolittle, whose reply appeared in the last issue, p. 227.—ED.]

Your question is a very broad one. Unfortunately—fortunately in some respects—there are more ways than one of making increase. Indeed, taking all the variations that may be made, there are more ways than a dozen. What is the best way for one may not be the best way for another. What is best in one locality may not be best for the same man in another locality. What is best for one season may not always be best for another season. Indeed, what is best for a certain man in a certain locality and in a certain season may not be at all best for the same man in the same locality and in the same kind of season, if in the first case he is entirely without experience; and in the second case he has made great advancement. So I think you will see that, to be able to advise you satisfactorily, I ought to be well informed as to you and your surroundings.

I feel safe, however, in giving one general bit of advice to any one who wants to know the best way to make increase. It is, to inform oneself thoroughly on general principles. Make yourself thoroughly familiar with the contents of one or more of the excellent books of instruction about bees, such as Root's A B C and X Y Z. Even things that on the surface seem to have no connection with the subject of increase may have a vital bearing upon it. Then give special attention to the matter of increase itself. Read up all you can in all the books and papers at your command that tells any thing about increase. I do not hesitate to recommend to you the book "Fifty Years among the Bees" as being as full upon the subject of increase as any book you can find, beginning at page 265. Having thus informed yourself you will likely be able to tell better than any one else what will best suit your case.

After generalizing in this way I will not leave the subject without some attempt at particularizing; and if I can not tell you what is the very best way for you I can at least say something about a way to do.

It is just possible that natural swarming may best suit your purpose. But if the bees are left entirely to their own devices, natural swarming is likely to be more or less unsatisfactory. They may swarm too little. They may swarm too much. The poorest colonies may swarm two or three times each, and the best colonies may re-

main without swarming. Well, then, don't leave them entirely to their own devices, but take a hand in the matter yourself. If there is any choice as to stock, select about five colonies that you think are the best of the nineteen. Suppose A is one of those that are thus selected, and that B, C, and D are three of those not selected. Take from one or all of B, C, and D some of their fullest and ripest frames of brood, and exchange with A for its poorest, thus strengthening and encouraging it to swarm. When A swarms, hive the swarm and set it on the stand of A, putting A in place of B, and setting B in a new place. The field bees of B, when they return from foraging, instead of returning to B will go straight to their old location and join A. That, of course, will strengthen A. In about eight days the first young queen in A will emerge from its cell, and a swarm will issue. Hive this swarm and set it in place of A, and set A in place of C, setting C in a new place. Within two or three days A will swarm again. Set the swarm in place of A, set A in place of D, and set D in a new place.

You have now accomplished two things: You have made sure of a swarm in place of each of the colonies B, C, and D, which, without your interference, might not have swarmed at all, and you have made sure that each shall have a queen of good stock.

Of course while all this has been going on you have performed in the same way with the other four of your selected colonies; and when all the colonies have been replaced by a swarm you will have 38 colonies in all. That is not as many as you want. Well, when you set A in place of D, probably A will swarm again in a day or two. When it does, you can set the swarm in place of A, and set A in a new place. If you do the same way with all of your selected colonies, that will add five more to your number, making 43 in all.

If you want to go beyond this, instead of putting A in a new place when it swarmed the last time on the stand vacated by B, set A in the place of C, putting C in a new place. Then when A swarms again you can set A in a new place unless you want to go still further.

The show may not come off exactly according to program, for there is a possibility that, toward the last, the swarm will not issue. There is very little doubt, however, about reaching the first 38. On the other hand, there is a possibility that, when A or one of its compeers is set on a new stand for the last, with the understanding that it will swarm no more, it may take it into its head to send out another swarm, although it will be a weakling. If this weakling is not desired, it may be put in a dark cellar for 24 hours, and then returned to the hive it came from.

Marengo, Ill.

IS SWARMING A CAUSE OR RESULT?

BY J. E. HAND

Swarming is the fulfillment of a natural impulse of bees, and is governed by certain fixed laws. Since swarming and queen-rearing are inseparably connected, the popular theory is that swarming-cells are constructed in obedience to a desire of the bees to swarm. Right here the question arises whether bees prepare for swarming by the construction of swarming-cells or whether all queen cells are constructed in obedience to certain fixed laws over which they have no control. In the latter event, swarming would be the effect instead of the cause of queen-cell construction. While many will not accept this theory, I think all will agree that the presence of a plurality of queen cells will cause after swarms to issue so long as a queen cell and a handful of bees remain, provided external conditions are favorable.

The popular theory prevails that there are two conditions under which "queen-right" bees rear queens, viz., swarming and supersEDURE. Who can distinguish between swarming and supersEDURE cells during a honey flow? To my mind, a more reasonable theory is that all queen cells are constructed in obedience to an inborn instinct to supersede either a failing or a departed queen. For instance, a combination of forces compels the construction of supersEDURE cells, and the presence of queen cells in a brood-chamber already having a vigorous queen places the colony in an abnormal condition; and the law of self-preservation, impelled by the power of instinct, compels the bees to seek the lines of least resistance by migrating to a new home, and hence the issuing of the swarm.

Doubtless some will say that bees will not construct supersEDURE cells while a vigorous queen is present. It is generally conceded, however, that, if a vigorous queen is caged within the hive in such a manner as to restrict her in the performance of her natural function (laying eggs), supersEDURE cells will usually be constructed. Hence it is evident that any thing that will have a tendency to restrict the queen in the performance of her natural function will operate as though she were actually failing. While restricted function is not the direct cause of swarming, the psychological condition thus produced will develop the queen-rearing impulse to the highest pitch, and supersEDURE cells will be constructed regardless of external conditions. Thus while the swarming instinct is always present, there will be no swarming unless the forces are present that nature employs to develop the queen-rearing impulse. While a slight restriction of the function of the queen may not be noticeable to the apiarist, it is, nevertheless, manifest to the unerring instinct of the bees to supersede a failing queen.

If the event transpires outside of the period of nectar secretion, and especially if

the diminution of egg production is due to a defect in the queen, supersEDURE will be the result. On the other hand, if the fertility of the queen is not exhausted, and if the decrease in egg-laying is due to restricted function of the queen, caused by an over-crowded condition of the brood-chamber, and if external conditions are favorable, swarming will be the result.

If the above deductions are correct, it is evident that any thing that will break up the combination of forces that nature employs to develop the queen-rearing impulse will prevent swarming; hence the importance of always having a young and vigorous queen in every hive. While a vigorous queen in a large brood-chamber will have a tendency to prevent the development of the queen-rearing impulse, perhaps some method of separating the bees and queen from their brood at the beginning of the honey flow is the surest and most economical method of swarm control. Such a method would provide ample room for the queen to exercise her natural function, and therefore the forces that develop the queen-rearing impulse are not present, and swarming is controlled. The segregation of many colonies near together is contrary to nature; therefore the fact that, under these conditions, bees will often swarm in open violation of all rules and regulations should not be taken as evidence of an error in the theory, but rather as an instance of abnormality caused by the excitement consequent upon the issuing of many swarms near each other.

Birmingham, O.

RHEUMATISM AND BEE STINGS

The Poison of the Stings Valuable for Only Certain Types of the Disease

BY J. B. TALMAGE, M. D.

I notice that from time to time various cures for rheumatism are presented to the public with somebody's recommendation that the one he describes is a sure cure. In GLEANINGS the favorite remedy discussed pro and con is bee stings. It is not my purpose to make GLEANINGS a medical journal, but it seems a matter of interest to consider briefly why so many cures are proposed, and said to be good or worthless according to each one's experience.

It should be known that the term "rheumatism" as commonly used covers a class of diseases such as inflammatory rheumatism (true rheumatism), muscular rheumatism (myositis or myalgia), articular rheumatism, rheumatoid arthritis, sciatica, etc. The character of these diseased conditions differs widely, and necessarily the same must be true of their treatment. Further, two cases that would be diagnosed the same might require different remedies for their cure because of the difference in the chemical and physiological condition of each individual. Physicians well understand that

the name of a disease can not be successfully treated, but that the patient must be treated in the diseased state that he presents. Hence his case must be studied and treated individually.

To illustrate this point and show the value of the poison from the honeybee (formic acid) in treating suitable cases of rheumatism I will relate two cases from my practice. A few years ago a man came to me, stating that he had rheumatism, and that he understood that I could cure such cases by giving the sting of the bee. He was assured that rheumatism could be treated in that way if the symptoms indicated that remedy. After getting his symptoms, and finding that drug well suited to his case, he was given the remedy, prepared in very small doses. After a time his neighbors told me that he was very much improved, and later he came in and said that the rheumatic pain had all left him.

A little later another man who was a great sufferer from a rheumatic condition, having talked with the one who was cured, came to me and very much desired to be cured in the same way. Upon taking his case carefully, I assured him that his case was different from the first, and that it was doubtful if he would receive benefit from the drug. As he was anxious to give the stings a trial he was given the same dosage the first man received. After taking the medicine without results he came the second time, and the prescription was repeated and faithfully taken, with no results whatever.

From the above it should be clear to every one why those who have been stung by bees have been cured of their rheumatism, and equally plain that the other rheumatics who submitted to this painful ordeal declare that stings will not cure rheumatism. From this we may see why one may recommend grape fruit, another hard cider, and a third something else. There is no panacea for rheumatism or any other disease.

If those who wish to try stings would consult their nearest homeopathic physician they could learn whether that was their remedy before undergoing this heroic and painful treatment at random, not knowing whether it would hit or miss. Homeopathy has used this remedy for very many years. Its symptomatology is based upon definite provings so that the treatment need not be applied in an uncertain way.

Ladoga, Ind.

THE GREEN FLOWERS OF NORTH AMERICA

BY JOHN H. LOVELL

[This is the second article in the series by Mr. Lovell, on the colors of North American flowers, the first appearing on page 53, Jan. 15.—ED.]

The primitive color of flowers was undoubtedly green. Many years ago the German poet Goethe proposed the theory that the whole flower was only a metamorphosed bud, or part of a branch of leaves, the mod-

ified leaves serving as pistils, stamens, petals, and sepals. Despite many attacks, this view is still accepted as true, at least historically. In most flowers the calyx has remained green; and in some species, as the hepatica, its derivation from leaves is evident from inspection. It is not uncommon for both sepals and petals to revert to green leaves, and I have before me a flower of the fuchsia with three white petals, while the fourth is a green leaf. This may even happen to the entire flower. In the Black Hills a fossil "flower" of a cycad-like plant has been found by Professor Wieland, of Yale, which is protected by an indefinite number of bract-like leaves instead of by a calyx or corolla.

The green hue of both green leaves and flowers is produced by the pigment called chlorophyll, or leaf-green. If you put a few grass leaves in alcohol the chlorophyll will dissolve out, forming a yellowish-green solution, and the leaves will be left perfectly white. Place this solution in bright sunlight, and its color will soon be destroyed. In living leaves and green flowers under the action of bright light the green pigment is constantly being destroyed and renewed, so that no two leaves are identical in hue, and no leaf long remains of the same shade. We are surprised to note that Freidank, a German poet, who lived four hundred years ago, observed this fact.

Many hundred flowers
Alike, none ever grew;
Mark it well, no leaf of green
Is just another's hue.

Leaf-green, or chlorophyll, is not only the most common but it is also the most useful of all pigments, for all life depends upon its existence. Leaves containing this pigment are able to make use of the energy of the sunbeam, and to manufacture out of water, and the carbonic dioxide in the air, starch, one of the principal plant foods. That is, out of the inorganic elements they build up an organic substance. As all animals are dependent either directly or indirectly upon vegetation for support, the destruction of chlorophyll would mean the disappearance of life from the earth. All living beings are dependent upon the radiant energy of the sun and upon chlorophyll. "In this sense," says Tyndall, "we are all 'souls of fire and children of the sun.'"

Of the 1244 green or greenish flowers found in the northeastern States, by far the larger part, or 1021, are pollinated by the wind. They contain no nectar, and are visited by bees only for pollen, and not as extensively as would be expected for even this purpose. They are all of small size, and by some botanists are believed to be derived from ancestors which were larger and were pollinated by the insects. Failing to attract a sufficient number of visitors for this purpose they have retrograded, and become adapted to pollination by wind. It is desirable that this group be recognized by beekeepers, since otherwise they might expect their bees to bring in nectar when it did not exist.

Only 223 green flowers are pollinated by

insects or are self-pollinated. Most of them are small or even minute; many have no petals, as 15 species of the buckwheat family, 8 species of the pink family, and also several in the rose family. While they very generally have the power of self-fertilization, as in the small flowers of the pinweed (*Lechea*), in some instances the sexes are borne on different plants.

They are chiefly attractive to flies and the smaller bees; but the yellowish-green pendulous flowers of the garden asparagus are very frequently visited by bees for nectar. The large greenish panicles of the sumac are also very attractive to bees. Mr. Allen Latham has described in *GLEANINGS* how in Connecticut, if there is fair hot weather in July, a colony of bees will store from 20 to 100 pounds of honey from *Rhus glabra*. The honey is described as golden in color, and at first intensely bitter in taste; but with age it acquires a most agreeable flavor.

Our common species of sumac in Maine is not *Rhus glabra* but *Rhus typhina*, which is often common in dry uplands. Besides bees, which are frequent visitors, I have taken on the flowers a large company of wild bees, flies, beetles, and even butterflies. The staminate flowers are white, and much oftener visited by insects than the green pistillate panicles. Some of the smaller bees which visit the former, apparently never visit the latter.

In the grape or vine family the small valvate petals never expand, but fall away by separating at the base and coiling spirally upward. The fragrance, which resembles that of mignonette, can be perceived at a long distance. Kerner relates that, in a journey up the Danube, he found the whole valley of the Wachau so filled with the scent of the vine flowers that it seemed impossible that they could be far off; yet the nearest vines were three hundred yards from the boat. The bee has been collected on the flowers, and cross-pollination is also occasionally effected by the wind.

Various exotic species of the nightshade family and some Brazilian orchids possess large green flowers. They are strongly scented in the evening, and are attractive to moths. As would be expected from their size, structure, and past history, the majority of green flowers are of little value to beekeepers. But in his list of honey plants of Texas, Scholl mentions several other shrubs or trees, besides the sumac, with small greenish or dull-colored flowers which produce nectar abundantly.

Waldoboro, Maine.

DOES IT PAY A BEEKEEPER TO MAKE HIS OWN HIVES?

BY G. C. GREINER

Since the appearance of my pictures in the July 15th issue for 1911 I have had numerous inquiries, both verbal and by letter, in regard to the practicability of beekeepers making their own hives; and the main

point always seemed to be the financial part of it. The questions asked run something like this:

"Do you think it would pay me to make my own hives?"

Without entering into any detailed discussion, my answer would be, "Yes, under certain conditions; but as a rule, emphatically no."

Years ago, when hive-making occupied more of my time than it has for the last ten or fifteen years, I expressed my opinion on this subject in one or the other of our bee magazines. To take up that subject again now, seems like dishing up an old story, and undoubtedly it is to some older beekeepers; but during the last decade or two a new advice-seeking generation has sprung up, and for their benefit I give my views again.

The prospective hive-maker may be anxious to know what those "certain conditions" are. I will enumerate them in the order of their importance:

1. The hive-maker must have a fair knowledge of bee nature, especially in regard to the way bees use the inside of a hive for comb-building, brood-rearing, etc.

2. He must have access to true-running, properly arranged power rip and crosscut saws, and be handy with a planer.

3. He must have a certain amount (the more the better) of natural mechanical inclination, and—

4. His necessary supply of lumber must be obtainable at a reasonable rate.

To the uninitiated, the first one of the named conditions may not seem of sufficient importance to take the first place. He may think that almost anybody can follow the instructions a properly constructed model will give. That may be true in some cases. We did the same thing when we launched out on our present occupation; but we happened to have a model to work from that allowed changes with no great inconvenience and expense, when progress and advancing ideas made them desirable. With others it may be different. It may not be long before the individual's experience may, for various reasons, make a change desirable. He may want to change from comb to extracted honey, or from one size of section to another, or change from eight to ten or ten to eight frame hives, and so on. All this would necessitate a change of appliances, which, after once started in with a quantity of a certain pattern, would be very inconvenient and expensive, or else it would cause a mixed lot of different sizes and dimensions among the outfit, which would be equally objectionable, for the most rigid uniformity in every thing is strictly necessary in any apiary. It is the keynote to convenient and rapid work. A little forethought on the part of the person who contemplates taking up beekeeping for a living, a little more study of our textbooks and literature, comparing his readings with his locality, his demand, and the outfit he intends to use,

etc., before he decides on any certain make of fixture, may prevent disappointment later on, and start him on the right track.

The second clause of "certain conditions" is of next importance. The whole outfit displayed in the above-mentioned pictures is all *home* made but not *hand* made. Every piece used in the makeup is fitted by power saws and planer. I am frequently asked, "Did you make your hives by hand?" I simply smile, and say, "Yes, I nailed them by hand, and I painted them by hand, and handled the lumber by hand when fitting the material; but I had power saws and planer to help me." Although I have done mechanical work all my lifetime, I consider fitting hive material by hand a task all out of the question. There is not a mechanic in the country who, with all his skill, can fit a single hive body, end piece, or make a main-frame topbar by hand as nearly perfect as true-running machinery will make, to say nothing of making it pay in quantities.

Next in order is the mechanical skill of the operator. Even when we have the necessary machinery at our command, it requires no little ingenuity to keep it in proper running order. It seems like an easy matter to set the gauge of a saw twice alike. It is for nearly all housework, even for door and sash manufacturing, that a little variation is many times admissible; but if positive uniformity is our aim, hive-making requires more exact measuring than almost any other kind of woodwork. As an illustration of what uniformity in an apiary means, I refer the reader again to the above-mentioned photographs. From a superficial view, the whole outfit seems to be uniformly made; and, in reality, we find that this is the case in every particular. Although the material was manufactured at different times, at intervals of from one to ten or fifteen years between different portions of it, every separate part, such as hive bodies, bottom-boards, covers, stands, etc., is interchangeable with every other one of the same kind; and, more than that, every separate piece, large or small, used in the construction of those different parts, is a perfect counterpart of every other one of its kind. When we started hive-making at the beginning of our beekeeping career, in 1876, and had decided on the kind, size, dimensions, etc., of our outfit, we made a list containing every separate piece used, and described it by its exact length, breadth, and thickness for our guide to work from. To this list we adhered, year after year, as closely as close measuring made it possible, and to this day I use the eccentric-lever forms for nailing main and broad frames (section holders) I made at that time, 36 years ago. The result of persistently applying our little available mechanical talent to our work is the complete uniformity in our apiary. The benefit derived therefrom can not be overestimated.

The lumber question, the last of the four requirements above mentioned, has also

considerable bearing on making home manufacture a paying venture. Thirty-six years ago, when the hills of our home town, Naples, were yet covered with unculled pine forest, a average lots of lumber could be bought from almost any neighbor at from \$12.00 to \$15.00 per 1000. These lots would contain any thing from six to sixteen or eighteen inches wide, and run from more or less knotty to clear or practically clear lumber. In sorting out the different grades to best advantage we could generally work up any lumber-pile into quite respectable-looking hives.

But times have changed. Our New York hills are pretty well stripped of pine or any other timber, and we are compelled to call on our local lumber-dealers, who import their stock from the West, for our supplies. Under these circumstances the prices of all kinds of lumber have risen to such dazzling heights that the pocketbooks of us common beekeepers can hardly reach them. To-day we would have to pay for fairly clear lumber (not strictly clear), such as would be desirable for hive bodies and cover tops, anywhere from \$60.00 to \$80.00. This item alone puts an unpleasant damper on home hive manufacture.

After making a brief statement of the foregoing, the inquirer generally asks: "How, then, can I get my supplies?" Very simple. If a person feels anxious to occupy his leisure time, and wishes to make use of the mechanical inclination he may be favored with, the shortest and most convenient way to procure his outfit is to order the fitted material from any of our established bee-supply manufacturers. They keep standard goods constantly on hand, and can fill an order on short notice. In case their list of supplies does not include the desired kind or any particular make we wish, by giving an exact description they will make to order any article desired; and, what is the best part of it, their work will be far superior to any home-shop productions.

In regard to expenses I know from experience that the price of fitted material is little, if any, above the cost of the raw lumber it would require to make the goods. For various reasons a part of my outfit was procured in this way some years ago. To prove that I do not overrate the exact workmanship of our bee-supply establishments, I will add, incidentally, that these ordered goods were made so near to given measurement that no variation could be detected from those of my own make.

La Salle, N. Y.

Upper Ventilation Makes the Honey Too Thick

As I work away from home I ventilated my hives by raising them $\frac{1}{8}$ of an inch from the bottom-board. I also put two one-inch auger-holes in the top of the brood-chamber, and kept on full-depth extracting-supers. I fixed ten colonies in this way without increase. One colony, whose hive was not ventilated, cast two swarms. I do not like ventilating here, as the moisture dries out of the honey until it is too thick to extract; but I believe that the plan is all right except in arid regions.

Acequia, Idaho.

C. A. VAN RYPER.



Allowing the bees of a swarm to run directly from a small cherry tree into a hive.

A SWARM THAT TOOK ENTIRE POSSESSION OF A CHERRY TREE

BY R. C. SCOTT

The swarm shown in the engraving issued from a hive about the middle of August, and settled direct on this cherry tree. I placed a new nine-frame Massie hive by the tree, and the swarm entered it, although the hive had only the bare frames. After that time the bees filled the brood chamber clear full, and stored 15 lbs. in the super.

Secondo, Col.

CARNIOLANS NOT SWARMERS

BY LOUIS SCHOLL

After having quite a number of colonies of Carniolan bees in our apiaries for several years, both pure and crossed with blacks or Italians, we may say that we have never had any trouble with these bees swarming more than any other that we have observed. Our experience has included every variety of bees that have been popular at one time or another, such as blacks, Italians (goldens and three-banded), Cyprians, Holy Lands, Carniolans, Caucasians, and Banats, and various crosses of several of these races. We have, however, attributed our success in controlling swarming of even the much-condemned Carniolans to the large hives

we use. They are ten-frame hives which we adopted years ago after trying them side by side with the eight-frame hives, in every possible way, trying to make the best use out of them, since we had them on our hands. In addition to the regular ten-frame hives we have the ten-frame divisible-brood-chamber hives that are still better for this purpose of swarm control, since many manipulations can be made with this kind of hive that are not possible with the regular hives.

But recently we received a letter from a Carniolan queen-breeder, Wm. Kernal, in which he says in part, "You will find that Carniolans will do best in ten-frame hives. They seem to do better than in eight-frame tiered up. If you have any ten-frame hives, try them; and if you give them an abundance of *drawn comb* they will never swarm. I think Moses Quinby told us this." This shows how nearly right we were in our supposition and the use of the ten-frame hives.

This is a matter of importance to the honey-producer who wishes to make large crops of honey instead of swarms, and especially if the bees are in out-apiaries. While it may be argued that other races would be better than Carniolans, we have two apiaries of them, and rather like their good qualities. They are large bees to begin with, although those who do not like a black bee may object to the color of the Carniolans. However, the person who studies their color and particular markings more closely will find

that their beautiful ashy-gray color is no uglier than the color of other bees. Then they are docile in their temperament, and quietly remain on their combs when handled, so that it is a pleasure to work with them. Especially during a honey-flow, when these great big fellows filled with honey drop from the combs with a heavy thud, the apiarist who is at all a student of nature can not keep from admiring them.

Another good trait is that they build up early in the spring—an important item where the spring flows come early.

As is well known, they cap their combs rather whiter than some of the other races, and this makes them excellent for producing fancy comb honey. Their excessive swarming has condemned them, however, in spite of these good qualities; but it seems that, with the proper hive and methods, this objection may be removed, at least to some extent. This would make the Carniolans seemingly a more valuable race than they have heretofore been reputed to be.

New Braunfels, Texas.



HOW AN EXPERT HANDLES A SWARM

Jacob Alpaugh Caught in the Act

BY F. DUNDAS TODD

There is a Scotch saying, "A gaun fit is aye getting", though it be but a broken tae." I am a scion of the tribe of the wandering foot, sometimes getting only a broken toe, but often something I appreciate more highly. Last summer, as bee inspector, I wandered to the tune of several thousand miles by rail, steamer, motor-boat, buggy, and canoe. Luckily for me I pulled through without breaking even a toe; but instead I got quite a lot of photographs, many of which concerned bees. I had a lot of fun taking them, and I want to pass a few of them along to the readers of their journal.

One morning I started out with a definite day's work planned; and as I jogged along, the idea came into my head that I ought to go and see a beekeeper whom I had formerly visited. I really had no particular excuse



FIG. 1.—The swarm in the tree.

for calling again; but just as soon as the notion jumped into my brain I decided I would be foolish for once and follow the whim.

On arriving at the apiary I found myself greatly rewarded; for just about the time I changed my mind Mr. Jacob Alpaugh, of Ontario, had happened on the scene, so here he was running a little bee convention for the benefit of only three people, and I hastened to raise the total gathering to four. We were comparing notes on the subject of swarming, when a swarm very opportunely appeared in the air. It was the first bee convention I had attended where a practical demonstration could be given just as soon as a subject was under discussion, so I quickly suggested that, if Mr. Alpaugh showed us how the beekeepers of Ontario handle a swarm, I would equalize matters by demonstrating how a beekeeper in British Columbia could photograph it. The bargain was considered fair and equitable, so I produced my camera, and he asked for a dishpan, a smoker, and a sheet. Nobody paid any attention to me.

Why did he prefer a dishpan, and what did he want with a smoker? The dishpan, he told us, was to be preferred because it was so smooth that the bees could not cling to it, and so were easily shaken off when they were dumped on the sheet in front of their new home. This was the first time I had ever heard of a dishpan being chosen

above all other utensils; but later in the season I met another beekeeper who had adopted it; but he hastily added a word of caution, to the effect that the pan should be kept away from the direct rays of the sun until it was needed, because, when the sunlight beats directly upon the pan, it gets very warm. One such experience with a hot pan was more than enough for him; for the moment the bees struck the hot metal they rose in a cloud, full of evil temper, attacking every living thing in sight.

In the matter of the smoker, he said he believed that a swarm clustering on a branch had guards set, just as if they were in the hive, so he always gave them a little puff of smoke to upset their equanimity. The sheet was thrown in front of the hive, that the bees might have a surface for walking on that was smoother than grass.

All preparations being made, Mr. Alpaugh got busy and so did I. He kept hustling, and it was up to me to press the bulb, turn on a new exposure in the kodak, and press again. I began with the swarm hanging on the branch; the result is shown in Fig. 1. Then Mr. Alpaugh got started to his work by puffing a little smoke on the bees as exhibited in Fig. 2. In the next photograph, Fig. 3, the button was pressed as he shook the branch, so all we see is a streak of bees. Proceeding to the hive Mr. Alpaugh gave



FIG. 2.—The preliminary smoking.



FIG. 3.—Shaking the branch and dislodging the bees into the dishpan.

the pan a sudden jerk that landed most of the insects on the white sheet (cover picture for this issue).

There was now time for a little conversation between Mr. Alpaugh and the owner of the apiary, as they "hunkered" (no English equivalent for this Scotch word) on opposite sides of the hive. Suddenly the visitor's hand shot out, and "There's the queen!" fell from his lips. Luckily I was prepared, so the incident is on record in Fig. 4.

DO BEES HEAR?

A few feet to the right of the hive there stood some kind of grass which had attained a height of about four feet. All the time the swarm was finding its way home, many bees—say a hundred—could be seen flying out and in among the stems, now near the ground, now higher up, as if they were searching for something. Mr. Alpaugh asked if I could give any explanation of their conduct. I threw up my hands at once, remarking that once in a while I had seen the same thing but never could account for their behavior. Then he remarked that this wandering around what was practically a solid wall was to him the best proof that bees could hear, for these stray bees heard the echo of the hum from the hive, and were searching for their companions. He



FIG. 4.—There's the queen!

had first noticed the condition when hiving swarms close to a solid fence; then later observation showed that, when the hive stood in the open, nothing of the kind happened.

NO PROTECTION AGAINST STINGS.

Mr. Alpaugh is the first beeman I ever met who works without any protection from stings when handling the bees. We spent a couple of days together, opened many hives, often upset the bees considerably, for frequently I had to cut down through the transversely built combs by cutting through the V-shaped edges and force them in line. The bees do not like this treatment any too well, but they always left Mr. Alpaugh alone. He smoked them considerably more than I ordinarily do. In addition he puffed smoke into his beard as a protection to his face. I have been wearing whiskers for 30 years without finding any special use for them, so it rather tickled me to find one man who had found the hair on his face to be of some use, even if it were only as a smoke-holder.

In my wanderings on the northern half of Vancouver Island later in the season, I came across the most vicious bees I ever met. At one seacoast village I had inspected the bees in the forenoon, creating quite a little excitement. A tethered horse smashed a dozen pickets out of a fence; all the dogs in the community, after snapping viciously at every part of their anatomy within reach, had hiked hurriedly for shelter, so that, where about a score had formerly slumbered in the open, not one was now visible. The grocery store was filled with agitated women; the only saloon was briskly dispensing liquid antidote for bee-stings.

Luckily for me the steamer appeared on the scene, so I hastened on board while the getting was good, and so avoided the rush. My next day's wandering brought me to the same pier, so I leaned over the side of the ship and inquired in my softest voice if bees did well on the island. Instantly a huge fist was lifted in my direction, and an angry voice assured me that no living thing had been safe since yesterday at noon. The grocery store was without customers; the owner's sole occupation and recreation was to watch some occasional man putting on his best speed while he frantically fanned the atmosphere with his hat. He invited me to come ashore; assured me that a very large and influential deputation of the inhabitants was just aching to interview me—had cried all night because they believed they would never see me again. Much to his regret I had to decline the earnest invitation—the most urgent and the warmest I had ever had in my life; but I could not get him to believe that were other communities who were sighing for my presence.

Victoria, B. C.

REMOVING A SWARM FROM A PEACH TREE

BY J. B. REYNOLDS

I am sending some pictures of a swarm of bees showing where it clustered on a peach tree. I shook them into a large box and carried them to the apiary and poured them out in front of an empty two-story hive in the corner, which was the location formerly occupied by the parent colony. Convoy, Ohio.

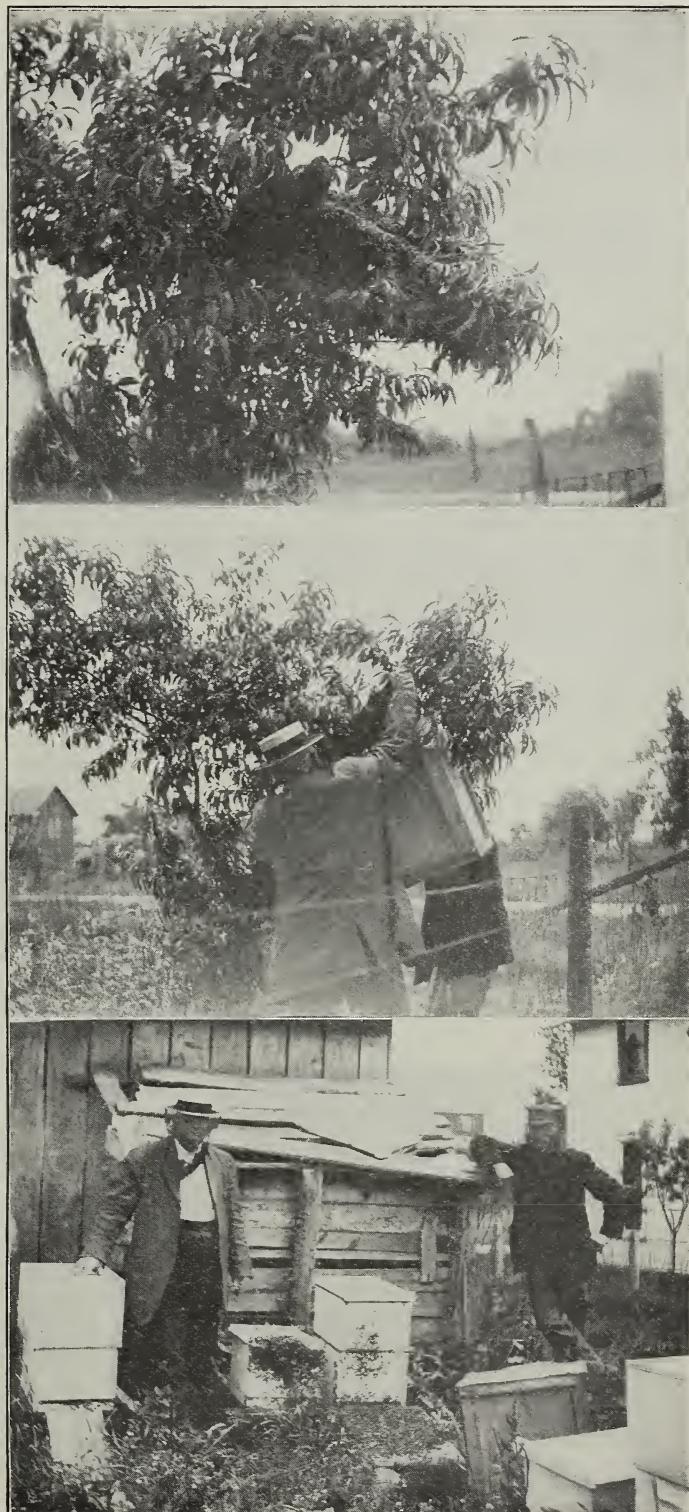
EXTRA RAPID INCREASE

How One Colony was Increased to Thirty in One Season

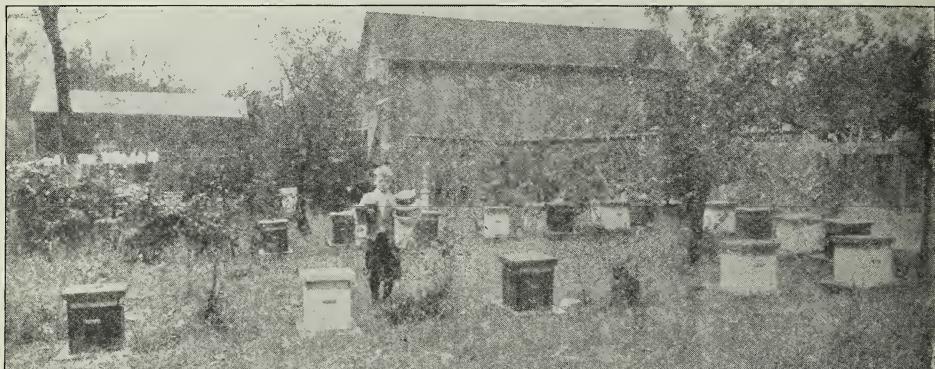
BY G. H. ADAMS

On the 20th of May, 1909, a friend of mine, Harry Fort, of Greenwich, N. Y., got a strong colony of Italian bees of me. He wanted more; but I advised him to wait and see how many colonies we could make in one season from this one. To my astonishment we were able to increase that one, with a few extra drones (as the queen did not lay drone eggs that season), to 30 strong colonies, the bees building all their own comb and rearing nearly all their own queens. We did it by dividing. We found it necessary to do some feeding, however, toward the last, as the season was poor.

In order to give a description of the method followed in making the increase it will be necessary to tell what kind of frames and hives I use. My brood frame is $11\frac{1}{8}$ inches deep and $11\frac{1}{8}$ long—nearly the same size as the Gallup. I consider it the best frame for all purposes ever used. I have tried the Langstroth and several other kinds, but do not like them. These frames being deeper, bees winter better on them. The extractors cost less for this kind of frame, and the combs of honey hang in them the same as they do in the hive, making it easier to extract without much breakage of combs. With the Langstroth frame very many break out when the combs are heavy, as they have to stand on end—at



J. B. Reynolds hiving a swarm clustered on a peach tree.



One colony increased to an apiary of thirty during 1910, the bees building all the combs from half-inch starters.

least that has been my experience. Bees build up faster in the spring in these frames, as the hives are more compact.

I use two sizes of hives, both of them of my own design — one an eight-frame hive which I use when running for increase, for shipping, and for wintering. The other, a sixteen-frame, is nearly 25 inches long, outside measure, and is used only for the production of comb or extracted honey. This I call my non-swarming hive, and I never had a colony swarm when the hive was tiered up three stories high, and only one swarm in 25 years, that I know of, when it was tiered two stories high. I make all my hives with a half-inch space above and below the frames excepting the brood chambers, which have a little more than an inch space below the bottom-bars.

Mr. Fort used nothing but half-inch starters in the brood frames, the bees building all their own combs except the starters. This queen was one of the best layers I ever saw. On May 29 I went to his place and examined the colony, and found seven full combs of brood and one comb full of honey. I took two combs of brood nearest ready to hatch, and the comb of honey, with plenty of bees on all three, and the queen, and put them in an empty hive quite a distance away. I shook the bees from two more combs from the old hive into the new one, knowing that many of the bees in the hive just made would return to the old location. I then placed five new frames with starters in the new hive and three new frames in the old queenless hive.

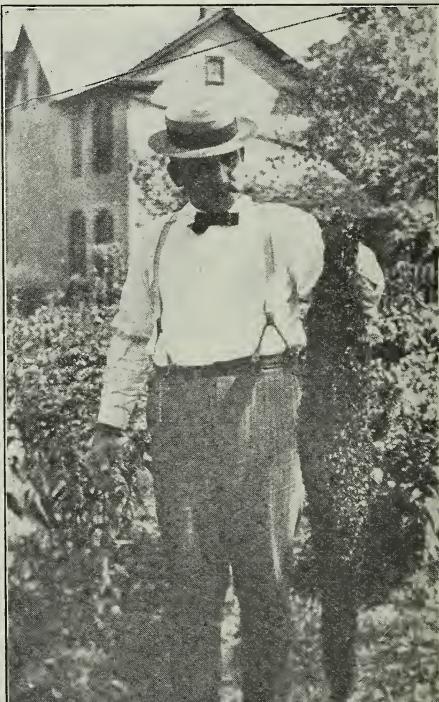
One week from this time I made two more small colonies from the queenless part, giving each part two nice queen cells. Of course the old hive with the one comb of brood was fully as strong as any, as most of the field workers were there. Note that the queen cells were all started where the field bees were. There were none in the new hive with the queen.

Mr. Fort painted some of his hives green, some white, and some red. Every young queen mated safely this time, and the four colonies were soon strong.

On June 26 the hive where the old queen was located was packed full again. I then divided in the same way I did before, and one week later two more were made.

On July 24 the hive containing the old queen was full once more, and I divided it that day; also quite a number of the old hives; and one week from that time many more were made. We had now come to a point where we could go fast, and the yard was soon full.

On August 28 we divided for the last time.



A large swarm for August.

We split seven of the strongest colonies right in two in the middle, as nearly as we could. Of course the larger part of the brood nearest ready to hatch was placed in the hives on the new stands, with the greater part of the worker bees. In this case we left the queens at home on the old stands. Of course all the old field workers would come back to the old places, and that was just what we wanted, because right here we safely introduced seven Italian queens of the J. P. Moore strain. The last colonies divided soon became strong.

When we had done dividing we found we had 31 colonies; but the queen of one of the hives was not laying as well as we believed she ought to, and so we killed her and attempted to introduce an Italian queen but failed. We then united this queenless colony with one of the weakest in the yard, which reduced the number to 30 colonies. I really believe that, if we had put young queens in the queenless parts as fast as we divided, we could have easily increased to 50 strong colonies from one.

Only 23 colonies can be seen in the picture; but there were thirty in all. Out of 21 colonies that Mr. Fort wintered out of doors by my system, 20 were alive last spring, and out of 9 that he put in the cellar, 7 lived through. The mice killed the two that died in the cellar, and he would have lost all in the cellar if he had not set traps and caught the mice. As it was, he had 27 strong colonies left last spring—a good showing for a beginner. One of these swarmed April 26, 1911. I doubt if this ever happened before in this northern county of New York (Rensselaer). Nineteen colonies were put in non-swarming hives, such as I mentioned, and the remainder were run for increase. Those run for honey had to build all of the surplus combs and half of the combs in the brood part; but they gathered over a ton of honey.

Troy, N. Y.

INCH BLOCKS UNDER BROOD CHAMBER DID NOT STOP AN AUGUST SWARM

BY G. J. WIMMER

I am sending you a picture of a swarm of bees cast Aug. 22. You will notice it is quite a large bunch. My hand is completely covered with them, and they extend almost to the ground. The hive and supers from which the swarm issued was so crowded that I placed inch blocks under the four corners of the hive, and yet they were clustering all around the outside in large numbers until the swarm finally came out.

Nazareth, Pa.

AN INGENIOUS EXTENSION POLE FOR A SWARM-CATCHER

BY W. A. PRYAL

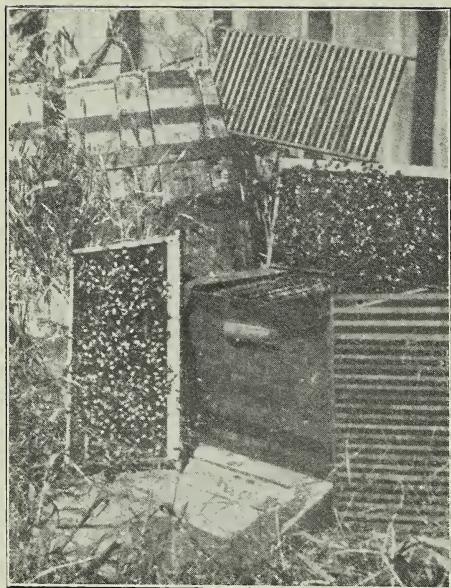
I am sending you herewith a photograph of our ingenious and witty friend S. A. Niver, now of this city, but until last year



S. A. Niver and his telescopic extension-pole swarm-catcher.

of Colerain, Wis. Mr. Niver worked my apiary last season after the beginning of April, and we secured a fair crop of honey, nearly all of which we disposed of at good prices. The apiary was increased and put in good working order for this season.

Mr. Niver reminds me much of our old friend the late J. H. Martin, known to your readers about a decade ago as "Rambler." Their make-up is about the same, save that the latter was not so tall by a good deal; and he is a great joker, as many who have attended Eastern conventions, which he probably graced with his presence, well know. But it is of him as an inventor that I started to write. Last season he brought out a number of new contrivances, possibly because he thought conditions here demanded some things different from what he used in the East. One of his labor-saving conveniences, and the only one I shall



Dividers like those used in the Aspinwall hive used in a double-story ten-frame hive, ordinary construction.

attempt to mention at length in this letter, is his trolley-pole telescoping hiving-basket for securing way-up-in-the-air swarms of bees. The photograph will make the whole idea clear. The basket fits into the upper end of the pole, and by means of the window-cord the basket is soon "histed" right under the swarm; and by means of a pole with a hook at the upper end the bees are jarred into the basket without any apparent trouble whatever. The wire-cloth container may be held near where the swarm has alighted, or it may be allowed to rest against a tree near by, and all flying bees of the swarm will soon join their fellows in the basket. Easy, isn't it? Another good feature about the contrivance is that the whole affair does not have to be lugged about the yard in one piece. The basket being easily removed, it is slipped from the pole, and the bees carried any distance, a cloth cover having first been pulled over them.

Oakland, Cal.

[If we are not mistaken, the original inventor of this extension pole was the late

Miles Morton, of New York State, a brother-in-law of Mr. Niver, alluded to by our correspondent. Full particulars in regard to the construction, dimensions, etc., of this swarm catcher, are given on page 173 of our Mar. 1st issue for 1899.—ED.]

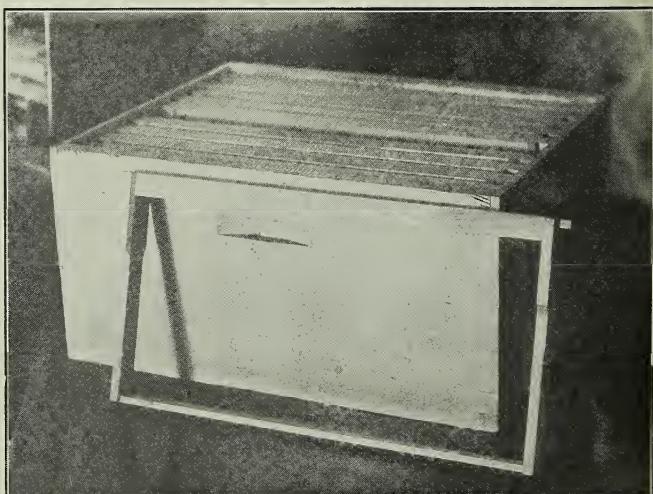
THE ASPINWALL NON-SWARMING PRINCIPLE APPLIED TO AN ORDINARY HIVE

Not an Entire Success, but Enough so to Justify Further Experimenting

BY A. V. SMALL

In the last edition of the A B C and X Y Z of Bee Culture there is a description of Mr. Aspinwall's non-swarming comb-honey hive. One feature of its construction is a movable side so that the brood chamber can be expanded laterally, thus making room for twice the usual number of brood frames. Three or four weeks before the swarming season, the sides are moved outward, and the brood frames are set about $1\frac{1}{2}$ inches apart. These spaces are filled with slatted partitions, or dividers, of the same size and shape as a brood frame. The slats are perpendicular, and are a bee space apart. This makes a large airy brood chamber with more than twice the ordinary clustering space. Mr. Aspinwall states that he has had no swarms from colonies kept in these hives.

Last summer I applied the Aspinwall principle to an ordinary hive by making ten slatted dividers the size and shape of a brood frame. The last of April I set another hive body on top of the brood chamber and placed half of the brood frames in each hive body, alternating them with the slatted dividers. Now, the brood chamber is composed of two sections—one above the other—each section containing five brood combs



The right way to assemble the Hoffman frame.

and five slatted partitions. This gives a big airy brood chamber, which goes a long way to make the bees contented. They cluster in the slatted dividers, and never hang out. There is so much space between the brood frames that the colony never feels crowded. Two comb-honey supers with shallow extracting frames on the sides were placed on top of the brood chamber. Half of the sections in the lower super contained combs partly drawn. It was in these that work first started, and soon spread throughout the super. The upper super was placed underneath when the first one was about three quarters full.

In this locality the flow depends on the weather, and the weather is very uncertain. If we start the bees in the second super before the first one is pretty well filled, we are apt to get more unfinished sections than full ones.

The experiment was tried with a rousing strong colony from stock that has the reputation of swarming twice a year. They got through the main honey flow in good shape. The ten combs were well filled with brood all of the time, and the colony stored a good surplus of nice section honey. About the first of August they built queen cells. In one I found an egg, and in another a young larva. These were destroyed; and as the hive stood in a very warm place I set one-inch blocks under the corners of the hive and slid the cover forward so that it rested on the back cleat. Plenty of ventilation is one of the best things I know of to keep down swarming, especially in very warm weather.

The colony thus ventilated built no more queen cells; and when smartweed began to flow they filled more sections, besides storing a goodly supply for themselves. The slatted dividers were removed, and the brood chamber reduced to one section as soon as brood-rearing began to slacken in the fall.

With this large airy brood chamber, with partly drawn combs in the lower super, and plenty of ventilation during the very warm weather, I think the tendency to swarm is no greater than that in a ten-frame two-story extracting hive. The queen is not discouraged in her egg-laying, with the result that there is always a strong working force ready to take care of any honey flow that may come.

While an apiary of such hives might not be practical, a little experimenting will do no harm, and may throw some light on the swarming question.

North Topeka, Kansas.

[This arrangement has been suggested before; but Mr. Aspinwall has not recommended it. Whether it would not accomplish the result sought at all, or would do so only partially, we can not say. If the slatted divider in alternation with the brood frames or section holders is the basic principle of his invention, then it would seem as if the same device, even though there were no extra slats back of the end bars, on the plan

here shown and described, would prevent swarming to a very great extent; and why not? The object of the slatted dividers is to prevent overcrowding of the brood nest. The bees, instead of clustering *outside* in front of the entrance, blocking the entrance (which ought to be wide open to provide for the necessary ventilation) will be *inside* the hive, where they can do some good.

It has been suggested that, when there is a lack of ventilation, the brood is liable to become overheated; that to prevent this the bees that are on the inside, where they should attend to the feeding of the brood, are forced outside; that the overheated or neglected brood and the idleness of the "house" force, if we may use the term, induces swarming. However this may be, we can not say. At all events, it is a fruitful subject for discussion.

We should like to hear from some of our other readers who may have tried the Aspinwall slatted dividers in the ordinary Langstroth hives. From the amount of inquiry that came in to this office about two years ago, asking if the device could not be used to prevent swarming in regulation hives, we should infer that some may have tried it. In the mean time, perhaps Mr. Aspinwall himself can throw some light on the plan tried out by our correspondent and why cells were started.—ED.]

A PRACTICAL WAY OF MAKING UP WINTER LOSS WITH A MINIMUM OF LABOR AND EXPENSE

BY E. D. TOWNSEND

What is the *best* way to make increase for one who runs about 25 ten-frame colonies for extracted honey? I have my nights and mornings principally for such work.

There are numerous plans in the bee papers and books, but usually there is an "or" in them, with a choice of some other way, and I should like a straight talk, with no "or."

Jefferson, N. Y.

G. W. HARRIS.

You will need to have your hives in readiness for the increase at the opening of the main honey flow, which will likely be from clover in your location. Here in Michigan, clover begins to produce honey any time between the 8th and the 15th of June, varying according to the condition of the weather during the spring.

The hives should be full of either drawn worker combs or frames with full sheets of medium brood foundation. We wire all our brood frames before putting in the foundation, seeing that the wires are drawn only moderately taut. The top wire can be drawn so taut as to sing some when picked with the finger. The two central wires should be drawn only until they are straight, while the bottom one must be left quite slack for best results. In fastening the foundation in the brood frames, be sure to see that the wedge is well seated in the sawkerf, otherwise the foundation with the weight of the bees adhering to it may drop out. Use an Easterday wire-imbedder.

As you are a carpenter you will likely have no trouble in nailing up the hives for your increase. In buying bees on Hoffman frames we found some of the end-bars had not been nailed on right. The V and flat edge of the end-bars should be nailed one way only. The illustration on page 278 makes this clear.

You have 25 colonies. As last winter was very hard on bees you will likely lose five of them. Five others may be too weak in numbers of bees to amount to much during the clover flow. This will leave fifteen strong colonies from which to make increase and get a fair crop of honey. At the very first signs that clover is beginning to yield honey, remove the fifteen strong colonies, and in their places put hives containing nine frames with full sheets of foundation, and one comb of brood with the queen from the old colony. Now place a queen excluder on top, then an upper story of extracting combs; then above this, as a third story, put the old brood nest. The tenth frame of foundation from the lower story can now be put in the third story to replace the brood comb removed.

When the bees surely have enough room without it, why is the middle story of extracting combs given at this time? I'll tell you, and this is a valuable "kink." We get the finest queen cells imaginable built in the third story. Were we to set this brood nest directly on top of the new swarm, as is customary, but few would build cells; but by isolating them up in the third story, separated from the brood by this story of empty combs, they do not hesitate to build lots of very fine queen cells.

Eight days after the division is made, the brood and queen cells in the brood nest at the top will be sealed; but as it is somewhat dangerous to handle queen cells at this age, and as we would prefer to have more bees hatch out of this old brood nest before making the final division, we leave them two days longer. On the tenth day, therefore, prepare as many bottom-boards upon new stands as you have made divisions, and remove the old brood nests—one to each of these bottom boards. When doing this, tilt up the bodies and look under for queen cells and mark upon the cover the number of frames containing good likely-looking queen cells for future use. There are usually some exceptions to the general rule, so we may expect that once in a great while no cells will be built, even when the brood is isolated, as I have explained. If one or two should be discovered without cells, go to one of the marked ones having frames with cells to spare, and exchange a comb of brood for one containing cells. This is the most simple plan of increase I know of; and any one with a season's experience ought to make a success with this method.

We will now suppose that you are not quite satisfied with the amount of increase obtained so far, and you want still more bees. All right. Locate five more bottom boards, the same as you did for the first di-

vision. (I would not do this until the next day after the first division, as this will give the old bees that you carried with your old brood nest to the new stand a chance to go home, so you will not have so many bees to bother you the next day). Place an empty body on each. Now go to five of your colonies marked "cells to spare," and remove a half of their combs containing about half of the brood and bees. One of the queen cells they contain should also go with each new colony. Now you have ten hives, each containing five combs of brood, and a good queen cell. Place these five combs of brood in the center of the hives from the five dead colonies I imagined you have, take their empty combs and fill out the empty space in these ten hives, and the work is done. It is all very simple; but be careful not to jar these ten-day-old queen cells too much or they will be spoiled.

If one has enough drawn combs, more of these brood nests can be divided provided there is a plenty of queen cells (and there usually is). If there is a buckwheat or fall flow these half-brood-nest colonies will usually fill up and have a plenty of stores for winter; otherwise they will have to be fed in the fall.

Later in the season Mr. Harris' medium-heft colonies will become strong and can be given upper stories for surplus honey. With this plan the colony on the old stand, containing the old queen, will do a "land-office business" in gathering honey after removing the brood from the top of their hive. All desire to swarm is taken from them with the removal of their brood nest, leaving them in that ideal condition so necessary for best results, i. e., free from the swarming fever.

In the above I have given our latest plan of making up our winter loss at our outyards. We simply go to the yard at the beginning of the clover or raspberry flow, make the first division, and give upper-story room to the rest of the yard for at least ten days, at the end of which time we make another visit. At this second trip the brood for our increase, and plenty of cells of the very best kind, are ready. With our previous plans, extra trips had to be made to provide queen cells for this increase. With this better plan, this is avoided; and, furthermore, it costs practically nothing to produce the queens, as the little colonies are so depleted of worker bees which have gone back to the old stand that there is nothing doing to speak of until new workers get old enough for field work, which will be ample time for the queen to mature and get to laying.

Remus, Mich.

Five Swarms from One

Last year my bees commenced to swarm June 23, and five swarms in all issued from one colony. The first swarm came out three times; the second once, twice; the third one, once. Can you beat this?

La Grange, Me.

E. A. DAY.

[That is quite a record, to be sure; but, at the same time, it is rarely a good plan to allow after-swarming. If you desire increase only, it would be better, in most cases, to make it artificially.—ED.]

MAKING UP WINTER LOSS

Rearing Queens in Upper Stories by the Alexander Plan

BY G. J. YODER

Since 1875 I had used the nucleus plan for queen-rearing, generally having two compartments for a queen in a hive; but when the Alexander plan came out it was so satisfactory that I abandoned the nucleus plan.

Several years ago we had a great spring loss; but we rallied, and bought bees until we had 60 colonies at the home yard. We had 150 sets of brood combs on hand, many of which were full of honey; and as soon as a colony was strong enough a full set of worker combs, partly filled with honey, was given, the queen having access to both stories. This soon resulted in very strong colonies, some of which were managed on the Alexander plan for rearing queens; while in case of the others the upper story was removed about the time the colonies were preparing to swarm—from one to three supers put on with full sheets of foundation fastened at the top and two sides, then a queen-excluder, and finally the upper story on top of that. This latter was left on until the bees were nearly all hatched, and we found that many of those having upper entrances, made by leaving out a part of the cleat at the back corner of the excluder, had matured queens. In the meantime, the bees had been drawing out the foundation in the supers below, and storing honey. At this point we removed the upper story, containing the new queen, thus making a new colony. Or the old queen was removed from the brood-chamber below, and the young queen reared in the upper story substituted, and this upper story placed on some other colony that had no supers. Years ago I tried raising queens in upper stories but failed.

By the fall of 1906 we had 150 colonies instead of the 60 we had started with in the spring, and we had secured an average of 125 lbs. to the colony, spring count, about half of which was extracted honey. We also had 40 sets of worker comb all the way from half full to full of honey. We uncapped these a little more than half way up from the bottom bar to the top bar, and ran them through the extractor. We were thus ready to make another trial the next year.

In the spring of 1907 we had less of a loss; but we soon put into operation the same plan that gave such good results the year before. We had more queens raised in upper stories than during the previous year, and all those upper stories that we set on new stands in the fore part of the season worked in supers during the last flow. I noticed in particular that the colony that raised the first queen that I put down in the lower brood-chamber gave 178 sections of fine honey.

I may be wrong; but I attribute the success in rearing queens in upper stories by

this plan to the distance between the two brood-chambers, and to the fact that the colonies were so strong. Removing the upper stories before many sections were capped also had a good deal to do with it. I prefer select cells built under the swarming impulse, which are generally very plentiful, and come at just the right time.

Some are not successful with the Alexander plan for rearing queens in upper stories; but in this locality it certainly works finely, especially if there are plenty of brood combs on hand. We went through these two very profitable honey seasons without a nucleus, and with much less work than would have been required by the old way.

Meridian, Idaho.

[It will be seen that our correspondent touches on the point brought out by Mr. Townsend in another article in this issue; that is, that bees rear queens more promptly in upper stories if these upper stories can be separated some distance from the lower stories, so that the brood is somewhat isolated. The plan of rearing queens in upper stories has much to commend it, and very likely much of the trouble heretofore has been caused by the upper story being too close to the lower one—the one containing the queen.—ED.]

PUTTING ON SUPERS

Should the Empty Super be Placed Below or Above the One Partly Filled?

BY DR. C. C. MILLER

When considering management of supers it makes some difference whether we are talking about section-supers or extracting-supers. There are general principles that apply alike to both kinds of supers. If a super of either kind be put under full or partly filled supers, the bees are likely to begin work on it sooner than if the empty super had been put on top. Also, the further a super is above the brood-chamber, the less danger there is of the bees carrying bits of dark wax from the brood-combs to put on the cappings in the super. It will be seen, however, that, while these things are alike true for both kinds of supers, they do not make the same difference in one kind as in the other. Generally an extracting-super is filled with drawn-out combs that have been used before; and if such a super be put on top the bees will begin work in it much more readily than they will in a super of empty sections. The bees will darken the cappings near the brood-chamber in either kind of super; but dark cappings are very objectionable in sections, and not at all objectionable in extracting-combs. So it will be seen that Mr. E. D. Townsend, with his extracting-supers, cares nothing about dark cappings, and not so very much about hurrying up the bees at beginning work in the new super.

Yet, even with extracting-combs, the bees will commence work at least a little sooner

if the super be added below, and Mr. Townsend is making a mistake in his management unless he has some other reason for it. I think he has a very good reason. As he explains it, if he puts the empty super under, unless an excluder is used the queen will often go up and lay in the super. If he puts the empty super on top, the queen is not likely to go up through the partly filled super to lay in the empty one, neither is she likely to occupy the super already occupied with honey. So he saves the expense and the bother of excluders, and that overbalances the gain there might be in putting the empty super under.

With section-supers, the practice varies all the way from never having more than two supers on at a time and always putting the empty super on top, to having six or eight supers on at a time, and always putting the empty super under. The argument of the former is that, when the bees are crowded down to two supers, they hurry up the finishing, giving less time for darkening, and resulting in fewer unfinished sections. Those, however, who use this plan successfully, use pretty large supers, which makes a difference. An objection to the plan is that, if you crowd bees so as to hasten the finishing, you are doing something that will at the same time be an inducement toward swarming.

Let me now refer to my own practice with section-supers, without saying by any means that I know all about it, for I've been all the while learning, and, likely enough, may make some change next year. Besides, there are times when it's a good bit a matter of guessing as to what is the best thing to do.

One thing I want is to have lots of room—not merely plenty of it, but abundance of it, so as to have whatever advantage there may be in abundance of room to prevent swarming. If there are bees enough to fill six or eight supers, then why not give them? Another desirable thing, as already intimated, is to get the bees started as soon as possible on the new super, and that means that, generally, the added super will be put under. It may be sometimes that there is a question as to whether the bees shall swarm or not, the thing being so near on a balance that an added super shall have the deciding vote, the vote being for swarming if the super is above, and against swarming if it is below.

To hasten the start in the super, a bait section is the thing. Bees seem to start on it just as soon as they would start in an extracting-super. In a poor season I've had the bait sections filled and sealed, all over the apiary, and not a section of foundation drawn out beside.

The second super will usually be put under the first about as soon as the first is half filled. If the season be poor, and the bees are making slow work on the first super, it may not be worth while to give any second super. If the season be very good, with every prospect of a big harvest, the second su-

per may be given before the first is half filled. Indeed, it may be given when only a fair start is made in the first. If there are bees enough to fill the two supers, they may as well fill them. It seems as if the harvest should be a trifle greater than if the bees do any waiting for room. With a strong colony and strong prospects, not only may an empty super be put under the first, but an empty super may also be put on top of the first super. I have practiced this putting an extra empty super on top for only a few years, but so far I like it well. It acts as a safety-valve. It may happen that the bees need it, and it's there ready, and the bees can take to it whenever they feel like it. If they don't need it they can let it alone.

Suppose, now, we have on each strong colony three supers. When the bottom one is half filled—sooner or later according to the strength of the colony and the prospects—the top super will be put down at the bottom. In a few cases this top super which is now put below will have a start made and some honey in it. This shows that it has done good, and without it the bees would have been crowded to their harm. Most of the top supers, however, that are now put down will show no start in them. Yet, even so, the bees have been in them a little; and when put down the bees will probably take to them just a little sooner than if they had not been on at all.

There is another reason for having that extra empty super on top. It gives more room, and the supers are a little cooler on a hot day. The bees have a comfortable feeling that they have all the room they want, and will be less inclined to think of swarming.

Still another reason: After an empty super has been on top a few days it may look as if the bees had never touched the foundation, none of it being drawn out; but if you look closely you will see that they have made more secure the fastening of the foundation to the topbar of the section. Occasionally a starter may be so lightly fastened that a full force of bees suddenly thrown upon it would break it down. The bees will fasten this securely before it is put down. Even if there should be a breakdown in the top super, it will have no honey in it, and will not be as bad as a breakdown below.

When the top super is put below, a fresh empty super is put on top. This course is continued till near the close of the harvest, the top super being put below as fast as it is needed, and a fresh super put in its place. Of course each super is taken off as soon as finished—often quite a little before all the sections in it are finished, but while the corner ones are not quite finished, and perhaps a few at the sides. The unfinished ones are assembled in a super and returned to be finished. In a good season there will be on some hives as many as seven supers at a time, and they will be all full of bees with the exception of the top one. It seems as if the harvest would be at least a little less if the bees were crowded into smaller space.

When it appears that the harvest will soon close, the top super is not put down. It is left on top where the bees can work in it if they really need more room. There is less danger then that crowding will induce swarming, and swarming thus late will not interfere so much with the harvest.

I have tried putting the most advanced super further down from the top in order to have it finished sooner; but I'm not certain there is any thing gained by it. The bees finish about as fast on top, and a super that has from two to five supers under it is not likely to have its sections darkened by bits of dark wax from the brood-combs.

Marengo, Ill.

LESSONS LEARNED FROM MISTAKES IN BEE-KEEPING

The Danger of Trying to Make Increase Too Rapidly

BY W. A. DUNTON, M. D.

Mistakes have often been more instructive for the guidance of others than proper procedures, because, when all the dangers are known, it is easy to steer clear of them. That others may profit, I will relate a few of my own mistakes in beekeeping.

Much of my trouble was caused because of an eager desire to increase the number of colonies too rapidly. I divided one of my best colonies by removing four frames, bees and all, to a new location. I intended to leave the queen on the old stand; but, instead, I took her with the nucleus. The result was that the old workers returned, and she was left with too few bees, and it required a long time to build up again. The honey-flow being good, and the bees in the old colony very numerous, they built drone comb rapidly, even on the lower half of full sheets of foundation. They made ten queen-cells on one comb besides several on another. Here was my opportunity. I shook off every bee, carefully cut out the queen-cells, fitted two into each of four combs, made five nuclei of two combs each, with all adhering bees, placed each comb containing the cells between the other two in each nucleus, closing the entrance with grass in accordance with the Somerford plan.

One lot was suffocated; two others lived, but built no queen-cells, while two only, out of the five, raised queens and lived by dint of constant additions of brood and honey.

Examining them I found all ten of the queens dead (I had shaken them to death while so carefully removing the bees before cutting out the cells).

HOW LAYING WORKERS WERE GOTTEN RID OF.

The bees of one of the two that hatched queens became excited one day when I opened them, and killed their queen before she had laid an egg. Discovering this a few days later I gave them a frame of brood from which they hatched another queen.

This queen was killed in the same manner. I gave them another frame of brood, and they capped over all the brood but started no queen-cells.

On my next visit I found a few eggs scattered around irregularly over two of the combs. Thinking this was something new I examined them again in a week, and the cells containing the eggs had been raised up into drone-cells; and the fact that I had laying workers slowly dawned upon me. I shook every bee out of the hive, 200 feet away, and then gave them another frame of eggs and brood. They refused to raise a queen, and the drone-eggs kept coming. I then united them with another colony, and had no more trouble.

MUTILATED DRONE BROOD LEFT IN THE COMBS.

I had a good colony which had been taken from the side of a house with great difficulty, and which had been installed in a hive with a superful of full sheets of foundation drawn out and partly filled with honey. The brood-chamber was full of brood, and every thing was booming. "Now is the time," thought I, "to make two colonies out of one." I gave the super to the colony on the old stand, carefully shook off all the bees except a few young ones, shaved off the heads of all the drone brood, and turned the new hive at right angles to the old hive.

In two weeks they had reared a queen, and the hive was packed with bees, but there was no honey. The drones had putrified in their cells, and the young bees had not been able to carry them out. The odor was suggestive of the smell of a fertilizer factory. However, in time they cleaned all the cells and the hive was sweet again. Just at this time the nectar failed and I had to feed both colonies.

A LARGE SWARM LOST.

In another apiary five colonies were placed close together, two of them above the other three. I moved one of the upper ones away, and the returning bees went into the strongest of the lower colonies that was already full of bees, and two days later a large swarm departed for parts unknown. The removal of three or four frames of brood from the strong colony would have saved my nice swarm; but that is another example of one of those touching events in human life mentioned by Whittier in his poem "Maud Muller"—"it might have been."

TOO MUCH ROOM A DISADVANTAGE.

Shaking all the bees from the combs of a strong colony I placed the brood over a small queenless stock. However, the honey-flow was poor in that vicinity, and the bees had twice as much room as they needed all summer. They should have been given four frames of brood, and treated as a nucleus in a single brood-chamber without a super.

I gave supers to several weak colonies, and thereby put the bees back by giving them too much space to keep warm, thereby curtailing brood-rearing.

COMBS MELTED DOWN.

I made a nucleus of four frames of brood without bees enough to protect the combs. As the hive was not properly shaded, the combs melted down, the larvae were cooked by the heat of the sun, and the bees were dead in a heap on the bottom of the hive.

VIRGIN KILLED LAYING QUEEN.

I had a small swarm from a nucleus, and put it back without killing one of the queens. A few days later I found drone-cells built from worker comb; and as they occupied a compact little space in the center of one comb I concluded that my remaining queen was probably not impregnated, so I placed the hive over a strong colony, and evidently the bees did their duty, as that colony is booming to-day.

NO HONEY LEFT IN THE BROOD-CHAMBER.

In July I found one super full of honey, and I removed it. A few days later I lifted that colony to see how much was in the brood-chamber, and found that they had no honey at all, having depended upon that in the super. The nectar failing just then, I had to feed them.

In September I examined a super and found from 20 to 25 lbs. of nice honey. I went out there a week later to get it, and in place of the fat combs of honey I found them almost empty. The handling had disturbed and alarmed them; and in order to assure themselves of its safety they had removed it to the brood-chamber. Truly, as Burns says,

The best-laid plans of mice and men
Gang aft agley.

I have said nothing about any of the "smart" things done with my bees, as these notes are supposed to relate only to my mistakes, which I hope may be of some slight service to my brother novices in bee culture.

Los Angeles, Cal.

A SWARM THAT DID NOT CLUSTER

BY WM. GRAMS

In Siftings for Dec. 15 mention is made of swarms not stopping to cluster. This seems to be an unusual stunt, and so I should like to tell of an "experience" which I had last July.

As a building contractor I went about three miles into the country to bid on a small country schoolhouse. Bids were received at the clerk's farm. The clerk, an old Scotchman and an old acquaintance of mine, had gotten a hive of bees from me some ten years previous; but from lack of attention they had not increased, for the reason that all swarms that ever issued went off. The people at the farm were sure that some of the swarms had gone off without clustering. I thought, of course, that they had not seen them. At any rate, after three years there was only one stand of bees left; but there was an empty hive

there which had always been ready to put the new swarm in.

As soon as I came to the place my old friend took me out to see the bees. It was an ideal place among the fruit and shade trees, where there was plenty of room to fly. He asked me if I thought that they had already swarmed and gone off, as usual, or whether they would swarm soon. I really did not know. Of my twenty colonies, not one had swarmed up to that time. The hive was crowded with bees. I told my old friend that, judging from the number of bees in the hive, they should have swarmed before, but that it might be that the queen got lost in the attempt to swarm, and that possibly, as soon as they were ready again, they might come out. I had to explain, as usual in such a case, what I meant by getting ready, which I did to him and half a dozen others who were then waiting for the opening of bids for the schoolhouse.

We were all in a room ready for this occasion not ten minutes after looking at the bees, when some one came in and reported that the bees were going off. We went out just in time to see the last of them going over the tree-tops. The boys followed them which was easily done, for it was such large swarm that there was a cloud of bees. They followed them while I got the hive ready.

The bees went about half a mile and then began to circle around a large scrub oak. I had the hive ready by that time, and about a dozen of us went over to the tree with the empty hive into which I intended to hive the swarm after it had clustered. When we reached the tree, most of the bees were still flying around; but many were alighting on the trunk of the tree, where I found a hole about three inches in diameter, about four feet from the ground. The bees were running into this hole at full speed, without clustering. I had the hive; but there was no chance to do any thing with it. They were running into the hole so fast that I supposed the queen had already gone in; but I continued to watch the mass of bees as they ran from the ground up toward the hole. To my surprise I found the queen, a fine specimen, and with a lucky twist I caught her firmly by the wings and showed her to the crowd, with the statement that I thought this must be an after-swarm, and that, as there was only this one queen with the swarm, the bees would return to the old stand, which they did.

I caged the queen, put the new hive on the old stand, and in a short time all of the bees were in the new hive on the old stand. I must confess here that my experience with bees is not so extensive that I could tell whether the queen that I took from the swarm was a virgin or a laying queen. She seemed to me very slim. But the main thing was that the bees came back.

These bees surely did not cluster, nor did they make any attempt to do so; for all of this occurred in about an hour.

Sturgis, S. D., Jan. 5.

Heads of Grain from Different Fields

Swarms Issue Before Cells are Sealed and After Queens are Hatching

In the summer of 1910 I had 34 colonies, spring count, located in a young orchard on a north slope. There was very little swarming until July 4; but from then on, swarms issued to about Aug. 1. In a majority of the cases I examined the parent colony after the swarm issued, and in almost all cases found that young queens had already issued or were gnawing their way out. In a number of instances the virgins came out while I was transferring swarm cells to queenless colonies. I well remember my first experience of that kind. I cut out a fine cell from a hive where a swarm had just issued, and laid it on a bit of board in the shade of a hive while I was cutting out another and closing the hive. When I looked at it again a bee was crawling all over the outside of it, and it was empty. I thought it could not be a queen, because it had not had time to hatch; but when the same thing was observed again, I "tumbled."

In the summer of 1911 I had my bees on a south slope with very little shade, and that from boards laid over the hives. Bees began swarming during the early part of June, and kept it up actively till the last of the month. By that time it was getting dry, and the previous abundant flow of honey was tapering off. My previous year's experience led me to suppose that swarms do not generally issue until young queens are ready to come out; but that season it was just the opposite. When I went through parent colonies I found a majority of the queen cells still unsealed, and had difficulty in getting any number of sealed cells from my best colonies to use in raising queens. I think all cells opened in hives from which swarms had just issued showed the queen still in the grub state—at least none were ripe, so far as my memory serves me. It completely upset my previous year's experience.

Rains came about the middle of July, and the fall flow was good. About the first of August, swarming began again and continued up to the 15th of the month. About ten or fifteen per cent of the colonies swarmed at this time. As in June, the bees again seemed to be swarming long before their queen cells were ready to hatch. Probably, taken as an average, my bees were not quite so well provided with storage room in 1911 as in 1910. In 1911 they were also more exposed to the sun.

But allowing for the two above-named differences I am myself inclined to charge the difference, in haste to swarm more to the difference in the season and honey flow of the two years.

J. D. ROBINSON.

Clipped Queens Not a Nuisance

The thought has often occurred to me that bee-keepers have a great advantage over those who handle other live animals because of the uniform action of bees under certain conditions. It seems to me that we should know just what bees will do if treated in a certain way; and yet, was there ever a business in which there is so much disagreement among the masters of the craft?

Some claim that clipped queens are a "nuisance." I can't see it that way, for I have clipped all of my queens for the past 25 years, and I can not recall that in all that time a single queen has been killed or injured by the bees on account of having been clipped. I always cut off about two-thirds of both wings on one side, and my bees hardly know what a queen would look like having both wings whole. Of course, queens reared in the fall keep both wings until clipping time in the spring, which is just as soon as I can handle them without exposure to cold. I clip to save time, work, and swarms. I am sure that I have saved a great many dollars' worth of bees by having all queens clipped. I admit that, if I were using very large hives, and had my fields all overstocked, it is likely that clipping could be dispensed with. Under such conditions there would be very few swarms. But the average bee-keeper will save much work by clipping. My hives are all placed close to the ground, and during the swarming season I keep the grass mown smooth around the entrances. When a swarm issues, the attendant can usually find the queen as soon as she leaves the hive.

I often pick up a queen, cage her, set the hive (from which the bees are still issuing) back a few feet with the entrance reversed, put a burlap over it, and, after placing a prepared hive on the old stand, put the caged queen in the entrance and go about other work, not having expended more than thirty seconds of time, well knowing that the bees of the swarm will return to the old stand reasonably soon, whether they cluster or not.

H. E. Harrington, page 143, March 1, says that he had to break off limbs and climb trees "just the same." I can't see why. I clip to avoid climbing trees and sawing limbs, and I do avoid it. My only failures have occurred where colonies that were supposed to have clipped queens had superseded and reared young queens. This happens only once in a great while. If you are sure your swarm can not combine with another that has a flying queen, or that they have not a virgin queen with them, you may rest assured that they will come back in due time. In cases where several swarms issue at nearly the same time, and all cluster together, it is an easy matter to divide them up and distribute them where wanted, if all of their queens are in cages. Possession of the queen is the key to the whole situation; and for my part I would not think of working without this advantage; but, as I intimated at the start, it is much easier to get the bees to agree on a certain course of action than to get any sort of agreement as to methods of procedure on the part of the men who handle them.

My son, who was practically reared in the apiary, says he never knew of a queen being injured by her bees because she was clipped.

Bridgeport, Wis., March 14. HARRY LATHROP.

How to Find Where the Swarm Came from

Going out into the beeyard one day recently, I found three swarms hanging clustered. That evening, just before dark, I called my son to assist me in finding where the swarms had come from, as I always like to learn this; and my plan works so nicely, and is so little trouble, I feel as if I should write it up for the benefit of others.

I have boxes of $\frac{3}{4}$ stuff, $3\frac{1}{4}$ inches wide by 5 high, and $5\frac{1}{2}$ long inside, with the bottom nailed fast. A $\frac{1}{2}$ -inch hole is bored in one end, and covered with wire cloth for ventilation. The top is the same width as the outside of the box, but an inch or two longer. A $\frac{3}{8}$ piece of board that is a little smaller than the inside of the top of the box is nailed on the bottom of the cover to keep it from slipping off.

When hiving one or more swarms I put about a teacupful of bees in the box and set it in the shade, and mark which swarm the bees are from. About sundown, or later if the bees work late, they are jarred down to the bottom of the box by setting it down hard. I lift the top off and dust enough wheat flour on the bees in the box to coat them lightly. I then dump them out on a hive cover; and if they do not fly readily they are dumped again on the ground. They will soon return to the old hive; and if there are several "boxes" to locate, an old sack can be thrown over the entrance and another box dumped, bees located, and so on until all are disposed of.

In order to work well the bees should be confined away from the swarm for a few hours. If the swarm has issued the same day, they are all right. If liberated while bees are flying freely they seem sometimes to be confused, and will try to enter other colonies, especially where young bees are playing. So, after the yard has quieted down toward night is the best time. But if the yard should quiet down before a rain, or if it should turn cool, the bees will go home just as well. Do not wait until nearly dark or the bees may not get their bearings. Too much flour makes the bees slow. It is easier if there is some one to find which hives the bees are entering.

Port Orange, Fla., March 26.

J. B. CASE.

Italian Bees Swarm Excessively

W. C. Mollette, Feb. 15, 1912, p. 100, complains of the excessive swarming of Italians. Many in this vicinity have had the same difficulty with Italians. A neighbor of mine who found a bee-tree asked me to assist him in cutting it and hiving the bees. The

following year they swarmed three times, and the first swarm also cast a swarm. Almost everybody here prefers black bees because they do not swarm so often.

CROSS BETWEEN ITALIANS AND BLACKS DESIRABLE.

I try to keep a cross between Italians and blacks, as I think they are superior to the Italians, and they seem to be the best all-around bee for this locality. I have a black queen three years old that was mated with an Italian drone, and I never saw better hustlers than her bees are; and as to their disposition, they are the quietest ones I have.

Webster Springs, W. Va.

L. S. WEESE.

Mr. Editor:—Will you please answer these questions for me?

1. Is it necessary to wire the brood-frames when starters are used?

2. I wish to make an increase this summer. Will you give me the best method? What month is best for this?

3. I bought three hives of bees during the past winter. The supers are on them, and they contain some honey. Should I take them off now, or will the bees use the honey this spring in brood-rearing?

4. What time should supers be put on the hives? White clover begins to bloom about May 10 to 15 in this locality.

5. I have some transferring to do during fruit bloom. At what time of day should this be done? Could I take the virgin queens that I catch at the second drive and introduce them to a frame of brood from some other hive to make increase?

6. Do you think I could produce comb honey without the use of separators?

7. When is a good time to paint hives?

8. Should the hives stand perfectly level or slant to the front?

Boreing, Ky., March 22. JESSE WOODWARD.

[1. It is almost as necessary to have wires when starters are used as full sheets. In fact, we do not see how any up-to-date beekeeper can get along without wiring his frames. The cost of the wire is insignificant when compared with the saving in the breakage of combs while handling or doing extracting. Without wires, combs (whether from full sheets or only starters) have a tendency to sag after they are drawn out, even though all the cells are worker at the start; and this sagging renders them unfit for worker brood.

2. In this issue you will find several pretty good methods for making increase explained. The Alexander plan has been spoken of very highly. It is as follows: When your colonies are nearly full enough to swarm naturally, and you wish to divide them so as to make two from one, go to the colony you wish to divide. Lift it from its stand and put in its place a hive containing frames of comb or foundation, the same as you would put the swarm in providing it had just swarmed. Now remove the center comb from this empty hive and put in its place a frame of brood, either from the hive you wish to divide or some other colony that can spare one, and be sure to find the queen and put her on this frame of brood in the new hive; also look it over very carefully to see that it contains no eggs nor larvae in any queen-cells. If it does, destroy them. Now put a queen-excluding honey-board on top of this new hive that contains the queen and frame of brood with their empty combs, then set your full queenless colony over the excluder. Next put in the empty comb or frame of foundation, wherever you got your frame of brood, and close the upper hive except the entrance they have through the excluder into the hive below. Now leave them in this way about five days, then look over the combs carefully, and destroy any larvae you may find in the queen-cells unless they are of a good strain of bees that you care to breed from, for they frequently start the rearing of queens above the excluder very soon after their queen has been placed below the excluder. If so, you had better separate them at once; but if they have not started any queen-cells above, then leave them together ten or eleven days, during which time the queen will get a fine lot of brood started in the lower hive, and every egg and particle of larva that was in the old hive on top will have matured, so it will be capped over and *savèd*; then separate them, putting the old hive on a new stand. It will then be full of young bees mostly, and capped brood, and in about twenty-four hours they will accept a ripe

cell, a virgin, or a laying queen, as they will then realize that they are hopelessly queenless. We would advise you to give them a laying queen, as we never like to keep our full colonies for even a day longer without a laying queen than we can help. In this way you have two strong colonies from one, as you have not lost a particle of brood nor checked the laying of your queen; and with us it almost wholly prevents swarming. This is the way we have made our increase for several years, and we like it much better than any other method we ever tried. In doing so you keep all your colonies strong during the whole summer, and it is the strong colonies that count in giving us our surplus.

As to when is the best time to make increase, it all depends on conditions. If you desire a honey crop, make increase *after* the honey-flow. At such time it will usually be necessary to practice stimulative feeding. If increase without reference to a honey crop is sought, then we would start dividing along about the last of May. When increase is being made in the spring or early summer, it is usually not necessary to feed.

3. If the supers contain sections partly filled, take them off. If they contain extracting-combs, and stores are scant in the brood-nest, leave them on. Better still, select out the light combs in the brood-nest, and put in their stead heavy combs from the super and then confine the bees down to one hive super.

4. Supers should be put on the hive about the time the bees begin to whiten the tops of the combs after the honey-flow begins. Honey does not begin to come in until about a week after the first clover begins to come out, so that you will need to put on supers somewhere from the 20th to the 25th in the average season; but better not go by the calendar but by the season.

5. We would select any hour in the day between ten and two o'clock. If possible, do the work in a sheltered location away from the wind, as some brood is liable to be chilled while being transferred.

Yes, you can catch the virgin queens at the same time, as explained.

6. You can produce comb honey without separators, but it is very unwise to do so. When separators are used, comb honey will bring anywhere from one to five cents a pound more. It is never economy to try to get along without them. If there could be a general law to compel all producers to use separators, it would be much better for the comb-honey market.

7. Usually after the honey-flow when work is slack.

8. Hives should slant to the front, so that water will run out of the entrances after a beating rain.—ED.]

Ohio Convention Report

The annual convention of the Ohio Beekeepers' Association was held at Springfield, Feb. 21. The association was favored with the presence of Dr. E. F. Phillips, of the Bureau of Entomology, Washington, and Chief Inspector N. E. Shaw, of the Department of Agriculture, Columbus. Mr. Shaw delivered a very able address on bee diseases in Ohio, which was highly appreciated.

Mr. E. R. Root and Dr. Phillips at the evening session gave addresses illustrated by the stereopticon, which were very instructive and interesting.

Mr. Henry Reddert read a paper during the day session on sweet-clover forage in and around large cities, which provoked considerable comment.

Mr. E. R. Root's talk, entitled "Recent Developments on the Wintering Question," was well received and discussed, as was Inspector Beard's paper entitled "What has been Accomplished by Inspection."

The following officers were elected to serve during 1912:

President, D. H. Morris, Springfield, O.

Vice-president, J. G. Creighton, Harrison, O.

Secretary, N. E. Shaw, Columbus, O.

Treasurer, C. H. Weber, Cincinnati, O.

The following is the Executive Committee:

A. N. Noble, Springfield, O.

Glenwood Beard, Magnetic Springs, O.

E. R. Root, Medina, O.

J. W. Arthur, Springfield, O.

C. E. Leavitt, Mechanicsburg, O.

Fred W. Hammerle, Hamilton, O.

The next meeting will be held in Columbus.

A. N. NOBLE, See.



Our Homes

A. I. Root

Beloved, let us love one another: for love is of God; and every one that loveth is born of God, and knoweth God. He that loveth not, knoweth not God, for God is love.—I. JOHN 4:7, 8.

The point I wish to consider in the above text is the expression, "God is love." Somebody has said that "love is God." What is love in the above text? We often speak of people being in love—a boy or a girl, a man or a woman. This affection between the sexes *should* be love; but how often it is a very poor excuse for real love! Our newspapers are full of tragedies that come from what is called love. A man says he loves a woman; and because she will not love him or will not marry him, he kills her and then perhaps commits suicide. Is there any real love in such a transaction? Far from it; and when we get right down to it, the love between the sexes is, as a rule, but a poor low kind of selfish love.

It *may* be, and God intended it *should* be, one of the highest attributes of the human family. It should be one of the most sacred and ennobling things that we meet with in this world of ours. It is, in fact, the foundation stone in building up the human race and Christian character.

The divorces that are getting to be so popular, and that we hear so much about, are results of this low kind of love, or only a selfish love. The love mentioned in our text is very holy and sacred—the very opposite of selfishness. God's love is for all humanity—good, bad, and indifferent. The love between the sexes, of which we have been speaking, is oftentimes, as I have said, but selfishness. Real true love, divine love, as spoken of in our text, is sacred and holy, and should result in doing good to *everybody*, lending a helping hand wherever an opportunity offers.

Some of our leading agricultural papers are doing quite a little lately in disclosing frauds, and they are, without question, helping humanity greatly. Our own journal (through your humble servant) as you may be aware has done quite a little along this line, and I have prayed most earnestly that God might help me to do my criticising with "love" in my heart and in a Christian spirit. While having this matter in mind I ran across the following clipping which I make from the *Sunday School Times*. I wish you would read it over, and then read it again:

THE POISON OF CRITICISM.

Critical thoughts and words are usually unloving. Therefore such criticism is poisonous—always to the one who expresses it, and often to the one who hears it. But it is so popular! Try to live one day without speaking a critical word or thinking a critical thought of any human being, and see if the habit of criticism has not been popular with you. Test it as you listen to the conversation of others—but don't criticise them if you find it is popular with them! Love them out of it instead. Only love will crowd criticism out of ourselves. And we need to be cleansed and purged of it wholly, completely, and for ever. It is so subtle, so inviting, so spon-

taneous, so attractive, so devilish, and so deadly! Our sin-habituuated natures are so shot through and through with this poison that only a miracle of change can help us. Christ will work the change. When he is overwhelming us with his infilling presence, we do not poisonously criticise; we cleansingly love.

The above almost startled me when I first read it. I said mentally, "Thank God for this kindly warning when perhaps I needed it most." God knows there is great need of kindly criticism of the way many men, especially evil-disposed men, are doing business in this world. I know by experience how hard a matter it is to show up fraud and injustice, and do it always in a Christian frame of mind. The loving and dear Savior said, remember, "Love ye your enemies, do good to those that hate you." It almost startles me yet when I think of what is implied in those wonderful words. Years ago I told my good old mother that those words came from heaven, and were heavenly and not of earth. Let me give you a little practical illustration. Some days ago I sent to great seedhouse for some garden seeds. Among other things I ordered some Golden Bantam sweet corn and also a like quantity of black Mexican sweet corn. I planted two rows of the Golden Bantam, and it came up promptly, almost every seed germinating. The third row was planted to the black Mexican, and scarcely a seed germinated. In ordering some more seed a few days later I mentioned my trouble with the black Mexican corn, and suggested that I thought they ought to know about it. No reply came. Some time later I had to mention that some of my order had not yet arrived, and spoke again of the black Mexican corn that would not germinate, and asked if some sort of reply should not be given me. After waiting a little time, and not hearing a word, I turned to their seed catalog and found the following note of warning or contract between themselves and the purchaser.

While we exercise great care to have all seeds, bulbs, and plants pure and reliable, we do not give any warranty, express or implied. If the purchaser does not accept the seeds on these terms and conditions, they must be returned at once, and the money that has been paid for the same will be returned. We can not afford knowingly to sell seeds doubtful as to vitality or purity. We test our seeds before sending out, and should they prove defective in germination or purity when properly planted and cultivated, we will refill the order free or refund the price paid.

I read it over and felt provoked, and decided it would be no more than fair to present the whole matter in our journal and discuss it in regard to the responsibility of seedsmen. Then I thought of the passage I have quoted from the *Sunday School Times*, and asked myself the question, "Is there nothing in my heart but love for these seedsmen, prominent seedsmen, who issue great nice catalogs, and have always enjoyed a good reputation?" Is there nothing but

love in my heart for these friends of mine (for I am sure they are my friends), while I think of publishing a protest against their warranty of their seed? A little later I decided to make still another trial of the Black Mexican sweet corn. I took it away on another part of my grounds and planted a long row. Almost every kernel germinated. Perhaps the weather was more favorable; but why did the Golden Bantam germinate so freely while the Mexican at first trial did not germinate at all? I have been thinking that my helper, Wesley, *may* have put a larger quantity of fertilizer on this black Mexican corn than he did on the Golden Bantam. Notwithstanding this, I *do* think the seedsmen should have made some reply of some kind; but my letters and orders were sent in at their very busiest time. Perhaps I should explain that my complaint about the Mexican seed corn was put on a separate sheet of paper so it could go to the proper one to consider. Never mind; my order went in at their very busiest season. Then I reflected that most of us do live "in glass houses," to use a familiar expression.

Just a few days ago I sent to The A. I. Root Company for a pound of Japanese buckwheat to be tested on my Florida grounds. When it came I made a protest because the package, which came by mail, contained quite a little chaff and dirt and other stuff, increasing the postage, and being of no use whatsoever. Of course this was the result of some careless clerk. If no one else received a like package of this, why—it was a very lucky chance that this one came to myself. It was the result of somebody not doing his duty. He probably scraped up the last bit in the bottom of the bin for myself, carelessly neglecting to use a sieve or something to take out the chaff. Now, I think it is certainly right to complain and tell when things are not just as they should be. Where there is a flaw in the matter that can be easily remedied, it should be before others are served in like manner. Unless you have had experience in showing up frauds, showing up irregularities, lack of care, etc., you hardly know how difficult it is to adjust all these matters in a loving and kindly feeling toward poor struggling humanity.

Years ago, in my childhood, I saw a little poem that had a couple of lines that run something like this:

Let love through all your actions run,
And all your words be mild.

The *Sunday School Times* suggests that only the love of Christ in our hearts can help us to avoid and keep away from this habit of unkind criticism. I do sometimes try to restrain hasty and severe criticism. A great many times I have put in a word in favor of the one who is under discussion. Oh! I wish that all would try to cultivate that spirit that "thinketh no evil." There are people in this world who seem to spend a great part of their lives in finding fault. Are you one of that sort? On the other hand, may the Lord be praised, there are those who always seem to be looking for the bright side of things, and who seem to be seeing the good traits instead of the bad in almost every one they meet. Mother was one of the latter sort. Bless her memory! That same old mother used to tell us children that we should "love the sinner" while we hated the sin. When Christ or the Christian spirit finds a dwelling-place in our hearts there will be no room for what we call revenge, no room for anger, no room for vexation. While I talk of it, and while I think of it, it seems so far above the life I am living that I am afraid I shall never come quite up to that standard, but constantly waver and drop back.

In closing I wish to make another extract from the *Sunday School Times*. It is a striking figure of the way in which divine love, or God's love, takes hold of sinful humanity and lifts it up into the sunlight of truth and righteousness.

LIFTING THE SUNKEN.

"I came not to call the righteous, but sinners." A very striking method is now successfully employed for raising the cargoes of sunken vessels. A huge electro-magnet, operated from the deck of the vessel, is lowered to the submerged cargo; and if it be of a character subject to the influence of magnetism it is attracted and lifted by this power, and thus easily saved. There is a power from on high which came to seek and save that which was lost. Down in the murky depths of the waters of sin this magnet of love draws to itself sinful souls, and lifts them by its power to the bright sunlight and pure air above.

HIGH-PRESSURE GARDENING

A. I. ROOT

A NEW DISCOVERY.

We are still having them in our Florida home, but they are not all of them connected with either ducks or chickens. What I am going to speak of now comes nearer under the head Market Gardening, or, if you choose, High-pressure Gardening. A few days ago a neighbor brought over a new dish to us, which she said was made from "weeds" that grew on their place. After we had tasted it she explained that it was pokeweed, the new tender shoots being used, some-

thing like asparagus. It was one of my "happy surprises" to find that this same pokeweed, sometimes called poison, is really a delicious vegetable—much better than any of the "greens" that grow in the garden, not even excepting spinach. It comes up everywhere around here, especially where there is a piece of waste ground, making a wonderful growth in a short time. Mrs. Root has suggested that it would pay to cultivate it; and, from what experience we have had so far, I have no doubt of it. This is

another instance where a rank neglected weed is found to be a valuable vegetable; and I can distinctly remember the time when the tomato was thought unfit for food. Some people called it poison; and on looking up pokeweed in the dictionary I found, before the definition, a statement of its being sometimes considered poison.

Now, the other discovery is that it doesn't pay to fuss with old lamp-burners. In the poultry journals we are often told that it is advisable to boil them out in salsoda and water. Well, Mrs. Root had been spending a good deal of time in cleaning lamp chimneys, and had several times suggested that perhaps our oil was poor. But when we threw away the old lamp-burner and bought a new one that cost only ten cents we were agreeably surprised to find not only a much better light, but all of our troubles with cleaning lamp chimneys had disappeared, or pretty much all of them. Don't fuss with old burners. Of course, we have electricity in our home; but it is not put on until four o'clock P.M., and is turned off at twelve at night. If you get up after midnight or early in the morning you have to use a lamp. In fact, the only time I can use this dictaphone is after four in the afternoon or before midnight.

BUCKWHEAT IN THE FLORIDA SAND, ETC.

Some things will grow here in this Florida soil, while others will not. People from the North have many times been disappointed when they came to make garden and grow stuff down here. A short time ago our neighbor, Mr. Stanton, suggested that buckwheat takes kindly to the Florida soil. I sent for some samples from our home, and we were very agreeably surprised to see the buckwheat come up very quickly without any fertilizer of any account. It is now covered with bloom. I do not know that it would pay to raise buckwheat here for grain—probably not for seed; but chickens and ducks eat it with great avidity, and do their own harvesting and thrashing.

Another thing that seems to flourish in our Florida soil is the soy or soja bean. Chickens and ducks eat these almost the same as they eat green lettuce. Wild rabbits also have discovered their nourishing properties.

Rabbits in our neighborhood seem to be quite a pest. They can be fenced off with a two-foot poultry netting. The netting needs to be as small as inch mesh, however, for the young rabbits have a fashion of getting through the two-inch mesh with great facility. The past winter we have had no frost to do any damage worth mentioning, except that our sweet-potato vines were killed down and the beans and corn nipped, but started up again. Notwithstanding, I have had a very good crop of Red Bliss or Triumph potatoes, and they grew and matured in a surprisingly short space of time.

Irish potatoes have been all winter from fifty to sixty cents a peck. Our neighbor to the north has a beautiful lot of potatoes—

about half an acre in extent—that seemed to be so little affected by the Florida hot weather that I asked him what fertilizer and how much he used for growing such luxuriant vines that stood up and kept their color so handsomely. The reply was that he not only used a potato fertilizer pretty liberally (toward a ton to the acre), but he also put on a pretty good dressing of stable manure from the livery stable, paying three dollars per load for it, delivered on the ground. Some of our friends in the North would think this pretty extravagant manuring; but when you come to realize that he will probably get more than two dollars per bushel for his crop, it is not such a very bad investment after all. Our neighbor, Mr. Rood, is still making "big money" from celery and strawberries. They have had 40 cts. a quart during a great part of the winter for their berries. They are now down, however, to 25 cts. People are buying them quite liberally, and almost every day you see people going along with their hands full of baskets of strawberries for which they have paid 25 or 30 cts. a quart.

There has been considerable said about the amount of fertilizer required to grow any thing here in Florida. Neighbor Rood probably uses it as liberally as any one. On some of his big crops he has probably used two or even three tons of fertilizer to the acre that cost something like forty dollars a ton. Below I enclose a clipping from the *Manatee River Journal* for March 21:

Mr. E. B. Rood cut celery this week which will average easily eight hundred crates to the acre. At the present f. o. b. selling prices the net cash yield of this crop will be about \$2200 per acre.

Perhaps not all celery-growers have done as well as this; in fact, only a few of them, I suppose. Yet as a rule they have been doing unusually well during the past winter because of the high prices. I might mention that one car of Mr. Rood's celery went to Omaha; and another, which went off just a few days ago, went to some place in Canada. I don't know why it is that people pay such big prices for Florida celery unless it is because it has been found beneficial to the health. Celery is to the human family something like what lettuce is for ducks and chickens, especially in the winter time. Mr. Rood not only uses heavy quantities of fertilizer, but he has his ground thoroughly underdrained to take away all excess of moisture. On the other hand he has an artesian well to furnish water, through these same tiles, whenever there is a drouth.

POTATOES IN YOUR BACK YARD; A SHORT CUT FROM "PRODUCER TO CONSUMER."

I fear our department of High-pressure Gardening has been rather neglected; but right now (as soon as your eye catches these words) is just the time to wake up. I see potatoes are quoted in the Cleveland papers at \$1.50 per bushel, and old potatoes at that. New ones from Florida are \$2.00 or more; and you who buy by the peck or half-peck

are paying 50 or 60 cts. per peck; and, judging from last year, they will be 75 cts. or a dollar through May and June, and perhaps July. Philo has started thousands in growing their own eggs in the back yard, and the boys of America are doing wonderful things in waking up their "daddies" by growing more and better corn on an acre than the world ever heard of before.* Now, with the stimulus of high prices let us see how soon we can have some new potatoes in this same "back yard," and let us also see how many bushels can be grown on a single square rod of ground. The great world does not even yet know of the possibilities in potato-growing. Here in our Florida garden we grew "great beauties" of the Red Triumph, I think in about 50 days. We pulled them out of the hills as needed to go with our green peas, and the potatoes kept right on growing. To get real early potatoes you want to plant *whole* ones of pretty good size,† one in a hill. Have the soil very rich, and break the crust after every rain. Before you plant, have the ground *very thoroughly* pulverized a *foot deep*. Old well-rotted barnyard manure worked liberally is the best fertilizer I know of; but where commercial fertilizers are used they must be used intelligently. As soon as I reach my Ohio home (probably about April 20th) I expect to show the Roots and Rootlets how to grow their own potatoes. I forgot to say your ground must be well drained; and if it was ridged away up during the winter, you will be far ahead; then if a dry spell should happen to come you want some way to irrigate intelligently. The "high cost of living" and other obstacles before us is simply God's plan of teaching his beloved children important truths and lessons. Not only our prosperity but our *happiness* depends on our being bright, and ready to help ourselves, and in making "short cuts" from "producer to consumer." Now, when you have got an *ideal* little potato patch, write to "Uncle Amos" and he *may* call round to see it.

EARLY POTATOES—IMPORTANCE OF HUMUS.

When we reached our Florida home last November our garden was a great mass of

*The executive committee of the Boys' and Girls' Corn Club of Harrison Co., W. Va., recently perfected arrangements for the show at Clarksburg this fall. Contestants for the production prize on half-acre plots may use any seed corn they desire; but they are not eligible for any of the other prizes. All other contestants must use seed corn sent out from the experiment station at Morgantown or some of their own corn entered in the show last year. Handsome prizes of money and of merchandise will be given. Last year 15 counties had corn clubs and corn shows; 1800 to 2000 boys and girls belonged to these clubs, and raised by scientific methods enough fine seed corn to furnish the State for the next few years. This year the university hopes to extend this work to 40 or 50 of the 55 counties of the State. The county superintendents of schools are placed in charge of each county, and they are taking up the work enthusiastically. The university furnishes free of cost the seed corn and instructions, and sends an expert to judge the corn.

†Of course this will cost something for seed, but I think it will pay for a few for extra early.

weeds, mostly southern grasses. I said to Wesley, "I suppose it won't be possible to spade all this trash under?" "Mr. Root, I can turn it all under if you say so; but it will be some work."

I replied, "All right, Wesley, turn it all under out of sight."

He first cut it off level with the ground with a *sharp hoe*. Then he spaded a deep furrow and tramped the trash down and covered it with the sandy soil, and left my garden looking level and smooth. Now, many Florida people make a big bonfire of this trash from the garden; but our Florida experiment station has recently stated that trash and weeds turned under and rotted as above is worth about *nine times* as much as the ashes when the stuff is burned. But this is not all. Potatoes seem to delight in finding a mass of rotting vegetable matter in which to grow and expand handsome shapely tubers; and the beautiful Triumphs I have spoken of were found right in this mass of rotten hay, leaves, etc. Much has been said and written about "growing potatoes under straw;" but unless you have an abundance of rain it will be a failure besides being a deal of work. The better way is to put the tubers in wet or rotten straw, and cover them with rich soil. Well-rotted stable manure, where lots of bedding was used, is better still; and, in fact, any kind of decaying vegetable matter to furnish humus is the secret in getting large crops of nice potatoes, and getting them quickly. When wheat bran did not cost so much, some astonishing results were secured by putting bran right over the seed potatoes before they were covered. If you can get seed sprouted in the sunlight, as described in the potato book, you will be very much ahead in getting new potatoes quickly.

Now "get busy," all of you, so as to head off the "middleman" when potatoes are a dollar a peck. I see by the *Plain Dealer* of April 6 that old potatoes are already \$1.75 per bushel. See below:

CHICAGO, April 3.—Potatoes to-day were selling at \$1.75 a bushel, wholesale, the highest price recorded in recent years. This is contrasted with a price of 50 cents a bushel a year ago.

Impassable roads, inadequate transportation facilities, inability to get at potatoes buried last fall, and urgent shipping demand, are given as reasons by merchants for the high prices.

Housewives to-day were compelled to pay 50 cts. a peck.

THE EARLY JOE APPLE.

Although there have been several inquiries in regard to this beautiful and delicious apple, I have been disappointed since my return from Florida to find only one response to the offer of a free advertisement. It should have been published in *GLEANINGS* some time ago, as you will notice.

Joseph H. Black Son & Co., of Hightstown, N. J., have the Early Joe apple-trees for sale. We have them here probably 75 years old, and they bore some last season.

FRANK WARING.

Philipsburg, Pa., Feb. 13.

Now is there another nurseryman who has it for sale?